

Clinical and Angiographic Features of Acute Coronary Syndromes in HIV-infected compared with non-HIV-infected Patients

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ABSTRACT

Background: Acute coronary syndrome (ACS) is an emerging complication in HIV-infected patients under highly active antiretroviral treatment. Specific characteristics of ACS in HIV-infected patients remain unknown.

Methods: Between September 2003 and March 2006, we enrolled prospectively 104 HIV-infected patients (HIV+) and 184 controls (HIV-) admitted for ACS matched for age (+/- 5 years), gender and type of ACS in 23 different intensive care cardiology units.

Results: The mean age of patients was 48.7+/-9.1 years and 92.7% were men. Baseline clinical and angiographic characteristics are shown on this Poster. The most frequent type of ACS was ST segment elevation myocardial infarction (MI) (52.1%) then unstable angina (26.1%) and non-ST segment elevation MI (21.5%). At admission, Killip class 2 or more was more frequent in HIV+ compared with HIV- (8.9% vs 3.4%, p=0.049). However, left ventricular ejection fraction was similar in both groups (54.2% vs 54.5%, p=0.79). Angiographic feature were nearly identical in both group (extension, severity, culprit lesion)

Percutaneous coronary intervention was performed less frequently in HIV+ compared with HIV- (72.6% vs 86.3% p= 0.005) as the use of GPIIb/IIIa (31.7% vs 45.1%, p=0.026) but with the same procedural immediate success rate achieved (97%) and rate of stenting (96%). The rate of bare metal and drug eluting stents implanted was similar in both groups (63% vs 64%, p=0.5 and 37% vs 36%, p=0.9, respectively).

Conclusion: HIV-infected patients did not differ from non-HIV-infected patients regarding baseline clinical and angiographic characteristics during a first episode of ACS. Follow-up of this observational prospective study will continue during 3 years.

METHODS

In order to collect information about cardiovascular risk in acute coronary syndrome (ACS) in HIV+ population, we designed a prospective study and included, between September 2003 and March 2006, 104 HIV+ patients admitted in an intensive care unit for a "de novo" ACS, in 23 French hospitals. HIV+ patients were matched for age (± 5 years), gender and type of ACS with 184 HIV- patients. As often as possible, cases and controls were enrolled in the same hospital.

Patients will be followed up to sample adverse cardiovascular events including death, recurrent ischemia, recurrent revascularization, stroke, congestive heart failure and arrhythmia during hospitalization and up to three years after discharge.

We are presenting baseline characteristics at inclusion.

The different variables are presented as mean value ± SD or percentages and compared using X² or Fisher test when appropriated for categorical variables and Mann-Whitney test for continuous variables.

RESULTS

Study population	HIV+ n = 104	HIV- n = 184
Age, mean ± SD, years	46.8 ± 11.1	45.9 ± 15.2
Sex		
Men, No. (%)	96 (92.3)	171 (92.9)
Women, No. (%)	8 (7.7)	13 (7.1)
ACS type		
STEMI, No. (%)	50 (48.1)	100 (54.4)
NSTEMI, No. (%)	22 (21.2)	40 (21.7)
Unstable angina, No. (%)	32 (30.8)	44 (23.9)

ACS = acute coronary syndrome, STEMI = ST elevation myocardial infarction, NSTEMI = non-ST elevation myocardial infarction

Acute coronary syndromes were sub-divided into three categories, according to guidelines using electric and enzymatic criteria (ST segment denivellation modification, troponin elevation). These results are concordant with literature where young patients (<50 years) had more frequently STEMI than non-STEMI.

HIV parameters	HIV+ (n = 104)
Duration of HIV infection, years	12.5 ± 7.9
AIDS status, n (%)	51 (49.5)
Viral load < 200 copies/ml, n (%)	70 (70)
	Median = 481
CD4 cell count, mm3	Q1 = 261 Q3 = 637
Lipodystrophy syndrome, n (%)	48 (46.2)

Despite the fact that half of the HIV-infected patients were at the AIDS stage, CD4 cell count at enrollment was relatively high in our population.

Lipodystrophy syndrome was defined clinically by the physicians caring for HIV disease.

Angina and heart failure severity	HIV+ n = 104	HIV- n = 184	P Value
CCS Class ≥ 2, No. (%)	70 (69)	135 (78)	0.10
Killip Class ≥ 2, No. (%)	9 (9)	6 (3)	0.048
Cardiac Arrest, No. (%)	0	3 (2)	0.56

CCS = Canadian Cardiovascular Society

Heart failure severity was more pronounced in HIV-infected patients (Killip class).

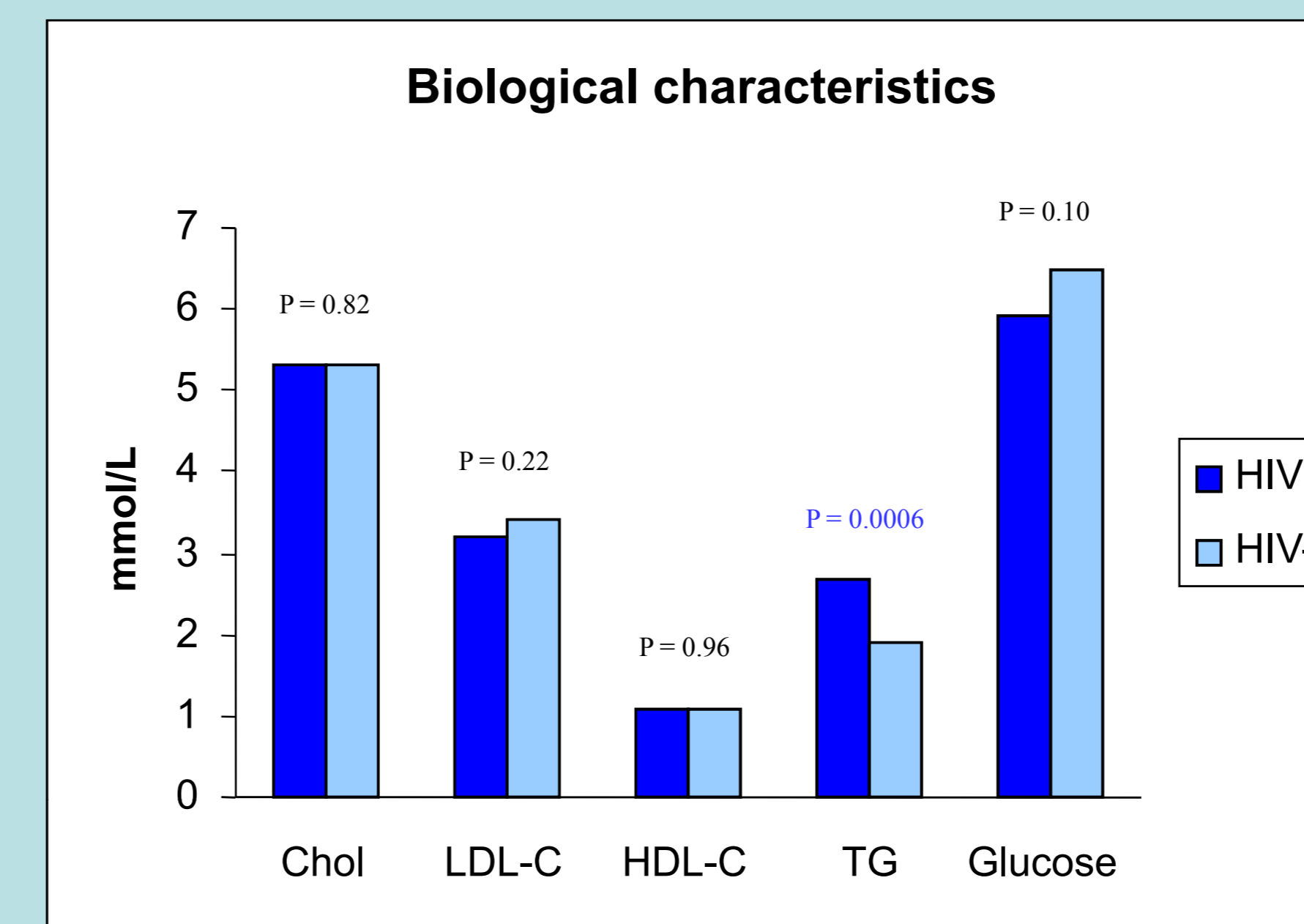
RESULTS

Characteristics at admission	HIV+ n = 104	HIV- n = 184	P Value
Current smoker, No.(%)	81 (80)	149 (84)	0,4
Hypercholesterolemia, No. (%)	47 (36)	72 (40)	0.27
Hypertriglyceridemia, No. (%)	42 (42)	36 (20)	0.0001
Family history of CAD, No. (%)	20 (20)	51 (28)	0.12
Alcohol > 2 glasses/day, No. (%)	12 (12)	31 (18)	0.22
Diabetes, No. (%)	9 (9)	19 (10)	0.66
Hypertension, No. (%)	20 (20)	47 (26)	0.25
BMI, kg/m², mean ± SD	22.8 ± 6.7	27.9 ± 4.8	0.005
Drug abuse, No. (%)	26 (26)	11 (6)	< 0.0001
Statins used before ACS, No. (%)	10 (9.6)	24 (13)	0.39

CAD = coronary artery disease, BMI = Body Mass Index

The percentage of smokers was very high in the two groups.

HIV-infected patients presented a lower body mass than the controls but a higher proportion of these patients were hypertriglyceridemic. Drug abuse was also more frequent in HIV-infected patients.



Chol = Total Cholesterol, LDL-C = Low-Density Lipoprotein Cholesterol, HDL-C = High-density Lipoprotein Cholesterol, TG = Triglycerides

CCS class evaluates the severity of Angina Pectoris as follows:

(Campeau L et al. Can J Cardiol. 2002;Apr 18:371-9)
Class I = ordinary physical activity does not cause angina
Class II = slight limitation of ordinary activity
Class III = marked limitation of ordinary physical activity
Class IV = anginal symptoms may be present at rest?

Killip Class describe individuals as:

(Killip T et al. Am J Cardio. 1967;20:457-464)
Class I = no clinical signs of heart failure
Class II = crackles, S3 gallop and elevated jugular venous
Class III = pulmonary edema
Class IV = cardiogenic shock

RESULTS

Baseline angiographic characteristics	HIV+ n = 104	HIV- n = 184	P Value
Cardiac Cath, No. (%)	100 (98)	181 (100)	0.13
Extent of coronary artery disease, No. (%)			
3 vessels	9 (9)	17 (9)	
2 vessels	24 (23)	43 (23)	0.16
1 vessel	55 (53)	111 (60)	
Left ventricular ejection fraction, %, mean ± SD	54.3 ± 11.8	54.5 ± 9.6	0.79
Culprit lesion, No. (%)			
Left Main	1 (1)	1 (1)	1.0
Left Anterior Descending Artery	39 (36)	66 (36)	0.78
Left Circumflex	12 (12)	22 (12)	0.92
Right Coronary Artery	26 (25)	61 (33)	0.15
Percutaneous Coronary Intervention, No. (%)	74 (73)	151 (86)	0.005
PCI with stenting, No. (%)	70 (95)	143 (97)	0.49
Drug eluted stent, No. (%)	25 (33)	53 (34)	0.92
AntiGPIIb/IIIa, No. (%)	33 (32)	83 (45)	0.026
PCI complications, No. (%)	3 (4)	4 (3)	0.69

PCI = Percutaneous Coronary Intervention

In our study PCI was performed less frequently in HIV-infected patients compared with non-infected patients as the use of GPIIb/IIIa, a high effective platelet inhibitor.

CONCLUSION

By design, mean age, sex distribution and ACS categories were the same in the two populations.

At admission, HIV-infected patients presented an hypertriglyceridemia more severe than the non-infected patients and they were thinner. HIV-patients were also more frequently illicit drugs user.

We did not observe any significant difference with regard to angiographic characteristics between the two groups.

Follow-up is underway to determine if after a "de novo" ACS, HIV-infected patients are prone to an increased risk of cardiovascular events compared to non-HIV infected patients.