

Poster presentation

## Virologic failure and metabolic syndrome in patients with HIV infection

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### Purpose of the study

The objective of our study was to assess the association between HIV-RNA viral load (HIV-VL) and metabolic syndrome (MS) prevalence in a cohort of HIV patients experienced to ART with lipodystrophy (LD).

### Methods

This was a cross-sectional observational study that included all consecutive HIV-infected patients evaluated at the metabolic clinic of the University of Modena and Reggio Emilia, Italy, between January 2006 and January 2008 who had received antiretroviral therapy for at least 2 years. Lipodystrophy and metabolic syndrome were defined according to MACS classification and to NCEP-ATP III criteria, respectively.

### Summary of results

1,348 patients were analyzed. 850 (63.1%) were males; mean age was 44.8 years ( $\pm 7.1$ ). Obesity, defined by body mass index  $>30$ , was diagnosed in 78 patients (5.8%). Prevalence of metabolic syndrome was 24.4%. 84.8% of the patients had HIV VL  $<400$  copies/mL. LD was diagnosed in 88.3%: 515 (39.3%) patients had lipoatrophy; 116 (8.9%) had fat accumulation; and 527 (40.2%) had mixed forms. Patients with MS had statistically significant greater value of each diagnostic criteria than those without (Table 1). Higher BMI, lipodystrophy presence, as well as VAT/TAT, trunk fat, total fat and total lean mass were associated with MS diagnosis (Table 1). MS was more prevalent in patients with higher log HIV-VL, PI and NNRTI

current use and NNRTI exposure (Table 1). Multivariate logistic regression shown in Table 2 illustrates that log HIV-VL is an independent predictor of metabolic syndrome.

### Conclusion

Our study highlights that HIV-infected patients experiencing virological failure are more at risk to develop MS. It is necessary to obtain virologic suppression to prevent not only AIDS-related opportunistic infections, but also those cardiovascular events and diabetes related to MS presence.

Table 1:

	SM+	SM-	p
Systolic BP, mmHg	129.84 ± 14.43	117.72 ± 14.67	< 0.0001
Diastolic BP, mmHg	86.88 ± 11.01	76.43 ± 12.42	< 0.0001
Glucose, mg/dL	107.73 ± 34.57	91.74 ± 13.84	< 0.0001
HDL, mg/dL	35.85 ± 8.63	48.84 ± 16.08	< 0.0001
Triglycerides, mg/dL	300.91 ± 206.15	179.15 ± 159.54	< 0.0001
Apo B, mg/dL	111.51 ± 29.64	100.57 ± 31.22	< 0.0001
TC/HDL	5.58 ± 1.63	4.21 ± 1.46	< 0.0001
HOMA > 3.8, n (%)	210 (65.02)	354 (35.36)	< 0.0001
HOMA, median (IQR)	5.14 (3.00; 8.15)	2.95 (1.93; 4.57)	< 0.0001
HIV duration, months	169.33 ± 62.15	172.35 ± 64.46	0.46
Log10 VL	2.17 ± 0.94	2.02 ± 0.79	0.0048
CD4 nadir, median (IQR)	150 (50; 250)	146 (60; 238)	0.86
CD4 current, median (IQR)	500 (342; 701)	502 (357; 681)	0.99
BMI	25.17 ± 4.40	22.80 ± 3.38	< 0.0001
Waist, cm	91.04 ± 11.27	83.71 ± 9.41	< 0.0001
PI current	199 (61.61)	529 (52.85)	0.006
NRTI current	321 (99.38)	998 (98.70)	0.31
NNRTI current	90 (27.86)	381 (38.06)	0.001
PI exposure, months	51.37 ± 47.95	49.05 ± 43.57	0.41
NRTI exposure, months	104.08 ± 58.67	108.46 ± 56.17	0.23
NNRTI exposure, months	26.15 ± 26.78	30.18 ± 30.94	0.0358
HCV	102 (31.58)	372 (37.16)	0.17
VAT/TAT	0.54 ± 0.17	0.48 ± 0.18	< 0.0001
%fat leg, median (IQR)	8.97 (5.89; 15.79)	9.67 (5.86; 15.88)	0.61
%fat leg/BMI, median (IQR)	0.36 (0.25; 0.61)	0.41 (0.26; 0.70)	0.0074
Trunk fat, g	7343.25 ± 3720.89	5943.93 ± 3219.04	< 0.0001
Total fat, g	12451.16 ± 7293.54	10200.50 ± 5768.74	< 0.0001
Total lean, g	53038.16 ± 9722.90	48689.95 ± 10030.84	< 0.0001

Table 2:

Variables	Adjusted OR (95% CI)	P-value
Log10 VL	1.23 (1.01–1.65)	0.006
Age (per 10-year increment)	1.41 (1.18–1.69)	< 0.0001
Waist, cm	1.05 (1.03–1.06)	< 0.0001
HOMA > 3.8	2.49 (1.89–3.29)	< 0.0001

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