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PREVALENCE OF METABOLIC SYNDROME IN PEOPLE LIVING WITH HIV AND ITS RELATIONSHIP WITH FATTY LIVER AND CARDIOVASCULAR RISK

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Rodriguez, Adrian[1,2]; Merino, Ignasi[2]; Villoslada, Aroa[1,2]; Sorni, Patricia[1,2]; Molero, Marta[1,2]; Serrano, Araceli[1,2]; Salom, Andrea[1,2]; Homar, Francisco[1,2]; Payeras, Antoni[1,2]
1Infectious Disease and HIV research group, IDISBA, Palma, Spain 2Internal Medicine - Infectious Disease, Hospital Universitari Son Llatzer, Palma, Spain

INTRODUCTION:
Metabolic syndrome (MS) is a set of medical conditions that, when present in a person, increases the risk of developing certain pathologies, such as fatty liver disease (FLD) or cardiovascular diseases (CVD). Some studies indicate that people living with HIV (PLWH) have a higher risk of MS, and by extension, higher risk of CVD and FLD. The aim of this study is to assess the prevalence of MS, using three different methods, in our cohort of PLWH, and to study its relationship with FLD and CVD.

MATERIALS AND METHODS:
MS was defined as having 3 or more of these 5 criteria:
- Waist circumference (WC) >102cm (men) or 88cm (women)
- Treated hypertension or systolic blood pressure (SBP) >130 or diastolic blood pressure (DBP) >85
- Treated type 2 diabetes mellitus or fasting glucose >100mg/dL
- Treated dyslipidemia or HDL <50mg/dL (women) or <45mg/dL (men)
- Treated hypertriglyceridemia or TG >150mg/dL

Additionally, two new classifications were made: MS with altered WC and MS with overweight/obesity (BMI >25kg/m²). The prevalence of MS was calculated, and in each group, the hepatic steatosis index (HSI), the percentage of patients with HSI >36, and the Framingham and Regicor cardiovascular risk scores were compared. Furthermore, we also compared the available controlled attenuation parameter (CAP) measurements, measured with a Fibroscan®.

RESULTS:
Out of 1096 PLWH in our cohort, there were 751 measurements of WC. Of these, 153 were women (20.4%). Table 1 summarizes the baseline characteristics of the cohort. Figure 1 shows the prevalence of MS using the three different methods. The overall percentage of MS, using the usual criteria, was 41.9%. Table 1 shows that patients with MS have, by all three methods, higher HSI values, a higher percentage of people with HSI >36, and higher cardiovascular risk scores (p<0.001 in all cases). Figure 2 shows the CAP values for 55 participants with available data, according to MS. Much higher CAP values are observed in those patient with MS. , and even higher with MS with altered WC or with overweight/obesity.

Table 1. Characteristics of the people included in the study. Results are expressed as mean (SD) or N (%)

Characteristic	Mean (SD) or N (%)
Age, years	50 (SD: 11)
Last CD4 count, cel/uL	802 (SD: 383)
BMI (kg/m²)	26.3 (SD: 5)
VL < 50 copies/mL	708 (94,3%)
Gender, women	153 (20.4%)
Transmission route	
Sexual intercourse-MSM	310 (41.3%)
Sexual intercourse-MSW	251 (33.4%)
Sharing injection material	154 (20.5%)
Other/Unknown	36 (4.8%)
ART treatment for HIV	
INSTI based (oral triple therapy)	369 (49.1%)
INSTI based (oral double therapy)	200 (26.6%)
INSTI based (intramuscular therapy)	69 (9.1%)
NNRTI or PI based therapy	73 (9.7%)
Other	40 (5.3%)
Diagnosed type 2 DM	85 (11.3%)
Diagnosed hypertension	84 (11.2%)
Treatment for hypertriglyceridemia	34 (4.5%)
Treatment for dyslipidemia	172 (22.9%)

Table 2. HSI, Framingham and Regicor scores according to MS. Results are expressed as N(%) or median[p25-p75].

		HSI [a]	HSI > 36[b]	Framingham[a]	Regicor[a]
MS	YES (N=315)	37[34-41]	207(66%)	12[8-19]	4[3-7]
	NO (N=436)	35[31-38]	65(15%)	6[3-10]	2[1-4]
	p-value	<0.001	<0.001	<0.001	<0.001
MS with altered WC	YES (N=190)	39[37-43]	159(84%)	12[8-18]	4[3-7]
	NO (N=561)	34[31-37]	113(20%)	8[4-12]	3[1-4]
	p-value	<0.001	<0.001	<0.001	<0.001
MS with overheight/obesity	YES (N=233)	39[36-42]	201(86%)	12[8-19]	4[3-7]
	NO (N=518)	34[31-37]	71(14%)	7[4-12]	3[1-4]
	p-value	<0.001	<0.001	<0.001	<0.001

a Mann-Whitney U test; b Chi-squared test

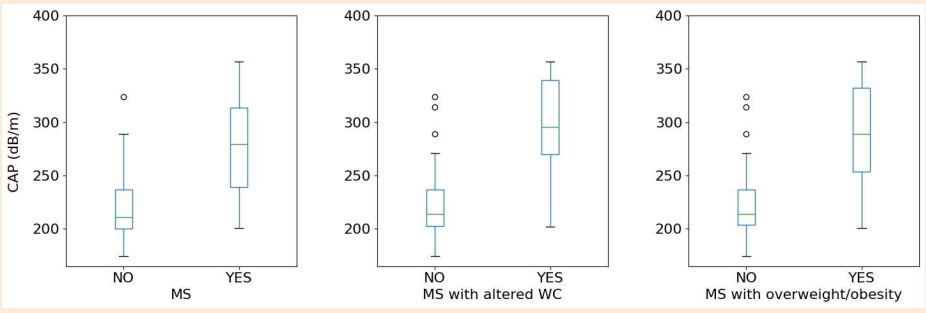

Figure 2. Box-plot od CAP values according to the presence of MS by the three different methods.

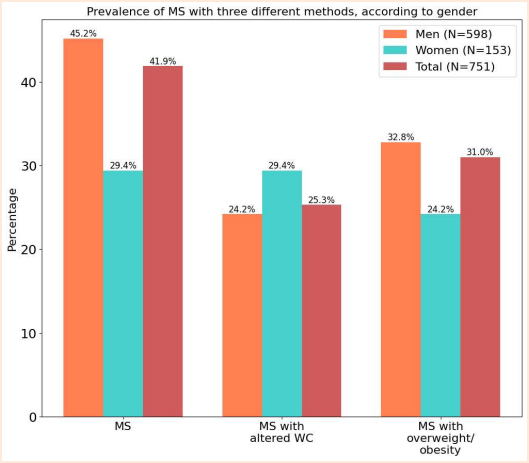

Figure 1. Prevalence of MS using three different methods, according to gender.

CONCLUSION:
Our cohort of PLWH has a very high prevalence of MS. MS is associated with higher rates of FLD and CVD. The use of MS with altered WC or with overweight/obesity may be a good alternative in PLWH.

References
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Correspondence to: adrian.rodriguez@hsll.es

Son Llàtzer HOSPITAL UNIVERSITARI
IdISBa Institut d'Investigació Sanitària Illes Balears