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P288

THERAPY WITH CABOTEGRAVIR AND RILPIVIRINE REDUCES THE RISK OF DEVELOPING METABOLIC SYNDROME

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BACKGROUND: Aims of this study were to describe prevalence and incidence of metabolic syndrome (MS) in people with HIV (PWH) before and after switching to long-acting cabotegravir (CAB) and rilpivirine (RPV) and to define risk factors associated to development of MS.

METHODS: SCohoLART (NCT05663580) is a single-center, prospective, cohort study enrolling PWH on virological suppression who switched to bimonthly long-acting CAB+RPV. Participants with a previous stable oral regimen for ≥1 year and who have ≥1 determination of MS before (PRE-CAB+RPV) and after switching to CAB+RPV were included. MS diagnosis was based on the NCEP ATP III 2005 criteria. Univariable Poisson regression model was used to estimate and compare crude incidence rates of MS. Multivariable Cox regression model with time-dependent covariates was used to assess factors associated with the risk of developing MS.

RESULTS:We included 393 PWH: 91.6% were male, with a median age of 50 years (41-56.9). Participants' characteristics at the switch to CAB+RPV are described in Table 1. At the beginning of PRE-CAB+RPV and CAB+RPV period, the overall prevalence of MS was 46.6% and 50.6% (95% confidence interval (CI), 95%CI=45.58-55.69), respectively. After switching to CAB+RPV, MS prevalence significantly increased (McNemar's test: p=0.002) to 53.2% (95%CI=48.11-58.20). The incidence rate of MS decreased from 2.37/100 person-years of follow-up (PYFU; 95%CI=1.36-3.86) in PRE-CAB+RPV period to 1.24/100-PYFU (95%CI=0.60-2.29) after the switch to CAB+RPV (p=0.10). After adjusting for sex, older age (adjusted hazard ratio [aHR] per 5 years older = 1.71 [95%CI=1.38-2.12]) was associated with an increased risk of MS; receiving CAB+RPV appeared to be a protective factor in the development of MS (CAB+RPV vs. PRE-CAB+RPV period: aHR = 0.03 [0.009, 0.10]), as well as greater years of virological suppression (aHR per 5 years older = 0.58 [0.34, 0.98]).

	N=393
Age, median (IQR)	50.0 (41.0-56.9)
Male, n (%)	360 (91.6%)
Years from HIV diagnosis, median (IQR)	15.0 (9.2-21.4)
Years of antiretroviral therapy, median (IQR)	12.1 (8.2-17.9)
Years of virological suppression, median (IQR)	9.4 (5.7-13.1)
Previous AIDS diagnosis, n (%)	42 (10.7%)
Nadir CD4+ ≤200 cells/μL, n (%)	103 (26.3%)
Nadir CD4+ (cells/μL), median (IQR)	318 (194-490)
CD4+ (cells/μL), median (IQR)	780 (593-988)
CD4+/CD8+, median (IQR)	0.97 (0.69-1.27)
Positive HBcAb, n (%)	93 (29.8%)
Body Mass Index (kg/m^2), median (IQR)	25 (23-27)
Waist circumference (cm), median (IQR)	91 (85-98)
Hypertension, yes	72 (18.3%)
Diabetes Mellitus, yes	14 (3.4%)
HDL cholesterol (mg/dL)	48 (40-56)
LDL cholesterol (mg/dL)	112 (96-135)
Total cholesterol (mg/dL)	179 (159-200)
Glucose (mg/dL)	89 (83-97)
Triglycerides (mg/dL)	100 (76-138)
Type of ART regimen in use at CAB+RPV start:	
2NRTI-1PI	9 (2.3%)
2NRTI-1NNRTI	114 (29.0%)
2NRTI-1INI	142 (36.1%)
Dual therapy	124 (31.6%)
Other regimen	4 (1.0%)
Months to MS diagnosis in participants with MS diagnosis during CAB+RPV	5.2 (3.6;8.8)
Months of follow-up of CAB+RPV	13.5 (10.1;15.6)

Table 1. Participants' characteristics at the switch to cabotegravir and rilpivirine.

Acronyms: IQR, interquartile range, AIDS, acquired immunodeficiency syndrome; HBcAb, ; HDL, high-density lipoprotein; LDL, low-density lipoprotein; CAB, cabotegravir; RPV, rilpivirine; NRTI, nucleoside reverse transcriptase inhibitor; PI, Protease inhibitors; NNRTI, non nucleoside reverse transcriptase inhibitor; INI, integrase inhibitor; MS, metabolic syndrome.

CONCLUSIONS: In our study, MS incidence decreased in PWH while receiving CAB+RPV. The use of CAB+RPV seemed to reduce the risk of developing MS after a 1 year follow up.