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ORAL COMMUNICATION

HIV associated comorbidities: matters of the heart

OC 55 Current and temporal exposure to integrase strand transfer inhibitors are not associated with hypertension or arterial stiffness in people with HIV

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ABSTRACT

Background: Controversial data exists regarding the association of integrase strand transfer inhibitors (INSTIs) therapy with hypertension (HTN) in people with HIV (PWH). HTN may drive arterial stiffness (arteriosclerosis) that can be assessed by means of pulse wave velocity (PWV). The aim of this study was to estimate the association between current and temporal exposure of INSTI vs boosted protease inhibitors (PIs) or non-nucleoside reverse transcriptase inhibitors (NNRTI) with both HTN and arterial stiffness.

Methods: We included 1408 antiretroviral therapy (ART)-experienced PWH, aged ≥18 years who underwent PWV assessments as part of cardiovascular disease (CVD) screening at Modena HIV Metabolic Clinic, Italy. Current and temporal exposure (in months) to each drug class was collected. HTN was defined as two consecutive systolic blood pressure (SBP) measurements ≥140 mmHg and/or diastolic blood pressure (DBP) ≥90 mmHg or the use of antihypertensive medications. Arterial stiffness was assessed with a carotid-femoral PWV measure >10 meters/second (m/s). Predictors for HTN and PWV>10 m/s were evaluated in the multivariate logistic regression.

Results: 1767 blood pressure and PWV measurements were evaluated. Median age was 53 years (IQR: 47-59), 70.9% males, 84.3% with high cardiovascular risk (ASCVD>7.5%). Current exposures to main ART classes were as follows: INSTI 45%, NNRTIs 31.6%, and PIs 39.9%. Temporal exposure to INSTIs was 31.1, NNRTIs 33.3, and PIs 44.3 months respectively. The median baseline SBP and DBP were 120 mmHg (IQR: 110-130), 76 mmHg (IQR: 70–82), 45.9% PWH were on treatment for HTN. Median PWV was 8.1 m/s (IQR, 7-9.8). Overall, the prevalence of HTN was 45.9% and the prevalence of PWV>10 was 22.8%. At last observation, PWH on INSTI displayed a worse cardiometabolic profile

as depicted in Table 1. In detail, a significantly higher prevalence of HTN (51.4% vs. 41.3%; p<0.001), PWV>10m/s (30.3% vs. 16.7%; p<0.001), diabetes (22.4% vs 13%; p<0.001) and dyslipidemia (85.2% vs 78.2%; p <0.001) when compared to other drug classes. Temporal exposure to INSTI was not a predictor of HTN (OR, 1; 95% CI 0.98-1.01; p=0.893) in a regression model adjusted for age, smoking (pack of cigarettes/year), body mass index, diabetes, dyslipidemia, time since HIV diagnosis, PI, NNRTI current exposure and temporal exposure (in months) to INSTI, PI and NNRTI. Temporal exposure to INSTI was not predictor of PWV>10 m/s (OR, 0.98; 95%CI 0.96-1.007; p=0.226) in a logistic regression model adjusted for the above-mentioned variables and HTN. The same results were obtained evaluation g separately raltegravir (RAL) and dolutegravir (DTG).

Conclusion: This study implies that INSTI-based regimens are preferentially offered to PWH with high cardiometabolic risk but current and temporal exposure to INSTI did not increase the risk of HTN or its associated vascular disease condition assessed with PWV>10 m/s.

Table 1. Demographics and clinical characteristics of patients on INSTI-based ART compared to non-INSTI-based ART

	All 1408	INSTI-group 634 pts	non-INSTI 774 pts	p value
Age, yrs	53 (47-59)	56 (51-60)	53 (45-56)	<0.001
Sex (male)	998 (70.9)	480 (75.7)	518 (66.9)	<0.001
Smoking, pack/year	19.4 (9.5-32)	21.6 (11.1-35.7)	16.7 (8-28.5)	<0.001
HOMA_insulin_resistance	1.9 (1.2-3.1)	2.2 (1.3-3.2)	1.7 (1.1-2.8)	0.001
HIV duration, yrs	22.2 (14.4-27.1)	24.7 (17.8-29.7)	19.5 (12.9-24.9)	<0.001
Calcium score (coronary artery)	17 (0-114)	36 (0-160)	0.5 (0-81)	0.001
Pulse wave velocity > 10, n. (%)	321 (22.8)	192 (30.3)	129 (16.7)	<0.001
Pulse wave velocity, m/s	8.1 (7-9.8)	8.8 (7.5-10.4)	7.6 (6.6-9.1)	<0.001
Dyslipidemia, n. (%)	1144 (81.3)	540 (85.2)	604 (78)	<0.001
Diabetes, n. (%)	243 (17.3)	142 (22.4)	101 (13)	<0.001
Hypertension, n. (%)	646 (45.9)	326 (51.4)	320 (41.3)	<0.001