



## PROPROTEIN CONVERTASE SUBTILISIN KEXIN TYPE 9 REGULATION IN HUMAN IMMUNODEFICIENCY VIRUS-INFECTED PATIENTS UNDER PROTEASE INHIBITORS

Moderated Poster Contributions

Prevention Moderated Poster Theater, Poster Hall, Hall C

Friday, March 17, 2017, 10:15 a.m.-10:25 a.m.

Session Title: The PCSK9 Revolution: New Insights Into Evaluation and Treatment

Abstract Category: 32. Prevention: Clinical

Presentation Number: 1133M-05

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**Background:** Mechanisms of HIV-associated dyslipidemia are complex, involving HIV itself and some protease inhibitors (PI). How PCSK9 level is regulated in HIV-infected patients (HIV+) treated with PI has never been investigated.

**Methods:** Fasting plasma concentrations of PCSK9 were measured using ELISA assay in HIV+ at ART initiation and after one year of PI-based therapy without any disruption. Subjects not virologically suppressed at follow-up, or taking any lipid lowering therapies at baseline or during follow-up were excluded. HIV-uninfected subjects (HIV-) matched on age and sex were included. Spearman's correlation coefficient was used to determine the association between PCSK9 levels and metabolic parameters at baseline and under PI.

**Results:** 103 HIV+ were enrolled: median age 36 years (IQR 30-45), 76% male. During a median exposure to PI of 14 months (IQR 12-20) most lipid parameters excluding triglycerides (TG) increased during PI exposure: total cholesterol from 4.2 to 5.1 mmol/L,  $p < 0.0001$ , LDL-C from 2.6 to 3.1 mmol/L,  $p < 0.0001$  and HDL-C from 1.1 to 1.2 mmol/L,  $p = 0.001$ , while PCSK9 level remained stable (280 (IQR 218-373) vs 283 (IQR 218-381) ng/mL). PCSK9 level at ART initiation was associated with immunodeficiency (CD4 T-cell count  $< 200/\text{mm}^3$ ,  $p = 0.002$ ), stage C HIV disease and HIV viral load ( $r = 0.24$ ,  $p = 0.01$ ). In PI-treated patients, PCSK9 levels were no longer associated with HIV-related factors but with total cholesterol ( $r = 0.34$  with  $p = 0.006$ ), LDL-C ( $r = 0.27$ ,  $p = 0.01$ ), HDL-C ( $r = 0.17$ ,  $p = 0.01$ ) and TG ( $r = 0.20$ ,  $p = 0.05$ ). PCSK9 levels were also associated with glucose parameters. Compared to controls ( $n = 90$ ), HIV+ had higher levels of PCSK9 at baseline and after PI exposure while they had lower LDLc concentrations.

**Conclusions:** Plasma PCSK9 concentrations remained stable in HIV+ treated with PI. However, while in ART-naïve patients, PCSK9 levels were mainly related to HIV infection severity, in PI-treated patients they showed the expected correlations with lipid and glucose parameters. Whether the higher levels of PCSK9 found in HIV+ as compared to controls are associated with the known higher risk of coronary heart disease needs further investigations.