Activation and Senescence Markers in HIV Patients with Chronic Kidney Disease

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**Poster #: 689**

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**Background**

- **Prevalence of chronic kidney disease (CKD):** 2% to 33% according to observational studies among HIV-infected patients.
- **ART-naïve HIV-infected individuals remain at higher risk for CKD than uninfected individuals.**
- **Recent studies have described associations between T cell immune activation (IA) and senescence (IS) and chronic kidney disease.**
- However, the link between a combination of IA and IS markers and CKD has not been assessed yet.

**Objectives:** To evaluate the association between a score combining IA and IS markers in HIV patients included in the ANRS CO3 Aquitaine Cohort (CABDOS substudy).

**Methods**

- **Study design:** cross-sectional study nested in the open prospective ANRS CO3 (CABDOS substudy).
- **Study population:** patients participating in the Aquitaine Cohort (Southwestern France); informed consent to contribute to the biobank of the cohort.
- **Statistical analysis:**
  - Student’s t-test or Mann-Whitney U test for quantitative variables / Chi-square test or Fisher’s exact test for qualitative variables.
  - Logistic regression models were used to evaluate the association between the CKD outcome (eGFR<60) and the baseline characteristics and the immune activation and senescence markers.

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**Results**

- **Table 1:** Baseline characteristics
  - **Table 3:** Immune markers in the CKD score
    - **Table 4:** Cardiovascular events

**Discussion**

- The discriminative capacity of the CKD score alone was poor (area under the ROC curve (AUC)=0.62). The AUC of adjusted models without CKD score were 0.75 and with CKD score 0.76. Thus the discriminative capacity was fair but not optimal.

**Conclusion**

- **A higher CKD score (higher IA and IS levels) was independently associated with advanced CKD.**
- **Early kidney disease defined by eGFR ≥90 and uPCR >30 was not associated with CKD score.**
- **However, follow-up of patients included in this first study is ongoing allowing for longitudinal analysis.**
- **The proportion of all comorbidities was higher among patients with an eGFR <60 (p<0.01), except for metabolic syndrome, chronic obstructive pulmonary disease and dementia.**
- **Patients with an eGFR <60 were older (53 vs. 50 years, p<0.01), were more frequently females (43% vs. 38%, p<0.01), and in CKD stage 3 (40% vs. 22%, p<0.01) and had a lower CD4+ cell count (578 vs. 649, p<0.01), compared to patients with an eGFR ≥90 (Data not shown).**

**Acknowledgements**

- **Winston JA. et al. HIV and CKD epidemiology.**
- **Duffau P. , Wittkop L. et al. Association of immune-activation and senescence markers with non-AIDS-defining comorbidities in HIV-suppressed patients.**