Elevated Cardiac Risk Score by ASCVD Calculation is Associated with Albuminuria in Older People Living with HIV

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No Conflicts of Interest
Increased Non-Communicable Disease Burden in Adults with HIV

Schouten, J. et al. Cross-sectional Comparison
Living with HIV can increase the risk of cardiac and kidney disease

- **1.5-2x** risk of coronary heart disease\(^1\)

- Greater **decrease in GFR** in older PLWH compared to HIV-controls\(^2\)

- Faster fall with albuminuria

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1) Arnett et al., 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease

Hypotheses

In Older People with HIV:

1) Presence of albuminuria is related to elevated atherosclerotic cardiovascular disease (ASCVD) risk scores

2) Those with elevated cardiac risk may be under-treated with statin medications
Methods: Cross-Sectional Study

1. Random Sample from HIV Clinic >50 years old
2. Participants >55 years old invited to Substudy
3. Study Enrollment

- ROAH 2.0 Survey Visit
- Clinical Visit: BP Measurement, Waist Circumference, Psychosocial Survey, Frailty testing and MoCA

- Body composition analysis
- EMR Clinical Data: Medications, labs, diagnosis codes
- Blood and Urine collected:
  - Measurement of Urine Albumin, Urine Creatinine
Methods: Atherosclerotic Cardiovascular Disease (ASCVD) Risk Score Calculation

Score >7.5% = “Elevated Cardiac Risk”
Methods: GFR Calculation

- CKD-Epi Equation:
  - Accuracy across a range of Glomerular Filtration Rates
  - Less underestimation of GFR in subjects with normal renal function

Florkowski, CM. Clin Biochem Rev. 2011 May; 32(2): 75–79
Methods: Urine Albumin:Creatinine Measurement

Results: Study Participants (N=164)

- Age range **55-78 years** (mean 61, SD 6)
- Median Time Living with HIV 25 years (IQR 22-29)
- 93% with HIV-1 Viral Load <200 copies/ml
- CD4: median 582 (IQR 402-795)
Cardiac Risk: Median ASCVD Score of 10.4% IQR(6-15)
GFR Relatively Preserved, Notable Albuminuria

Median GFR: 75 (IQR 60-91)

*p=0.002
No Significant Differences in Albuminuria by TDF, TAF or ACE/ARB Use

<table>
<thead>
<tr>
<th>Medication Use</th>
<th>No significant difference (p=0.32)</th>
<th>No significant difference (p=0.26)</th>
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<tr>
<td>Tenofovir disoproxil fumarate (TDF)</td>
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<td>Tenofovir alafenamide (TAF)</td>
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<td>Angiotensin Converting Enzyme (ACEi) or Angiotensin II receptor blockers (ARB)</td>
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Elevated ASCVD Risk Score Related to Moderate-Severe Albuminuria

- Median ASCVD score was greater in those with moderate-severe albuminuria by two-sample Wilcoxon rank-sum
  - Sensitivity analysis restricted to non-diabetics had similar findings (p=0.052)
Underuse of Statins for those with Elevated Cardiac Risk

- Among participants with Elevated ASCVD score (>7.5%):
  - 52% were on Statin
    - Those over age 65 (p<0.001) and with diabetes (p=0.002) were more likely to be on a statin
  - 19% on Abacavir
Conclusions

- Nearly a quarter (23%) had moderate-severely elevated albuminuric
- Over half (53%) with elevated ASCVD Score (>7.5%)
- Elevated ASCVD Risk related to albuminuric
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References


2) Arnett et al., 2019 ACC/AHA Guideline on the Primary Prevention of Cardiovascular Disease
