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INTRODUCTION

- Several recent studies have demonstrated that HIV infection could accelerate the process of atherosclerosis.¹
- High-sensitivity cardiac troponins (hs-cTn), a specific intracellular enzyme of myocardial cells, is suggestive of myocardial cell injury.²
- Elevation of hs-cTn is associated with coronary artery disease (CAD).³
- We explored the relationship between hs-cTn and subclinical arteriosclerosis using coronary artery calcification (CAC) scoring, a known surrogate of arteriosclerosis, among people living with HIV (PLHIV) older than 50 years.

DESIGN AND METHODS

- This was a cross-sectional study among 338 PLHIV aged > 50 years on ART without evidence of CAD from Thailand.
- The relationship between the CAC score (Agatston score) and serum hs-cTn levels was analyzed using Spearman correlation.

RESULTS

- Majority were male (62%) with a median age of 54 years and median ART duration was 16 (IQR 13-19) years. The median CD4 cell count was 614 cell/mm³, and 98% had HIV RNA < 50 copies/mL.
- Almost half of the participants had CAC >0 and **54 (16%) had CAC score ≥100**.
- 94% and 85% of participants had hs-cTnI (Troponin-I) concentration >1.9 pg/ml and hs-cTnT (Troponin-T) concentration >3pg/ml respectively.

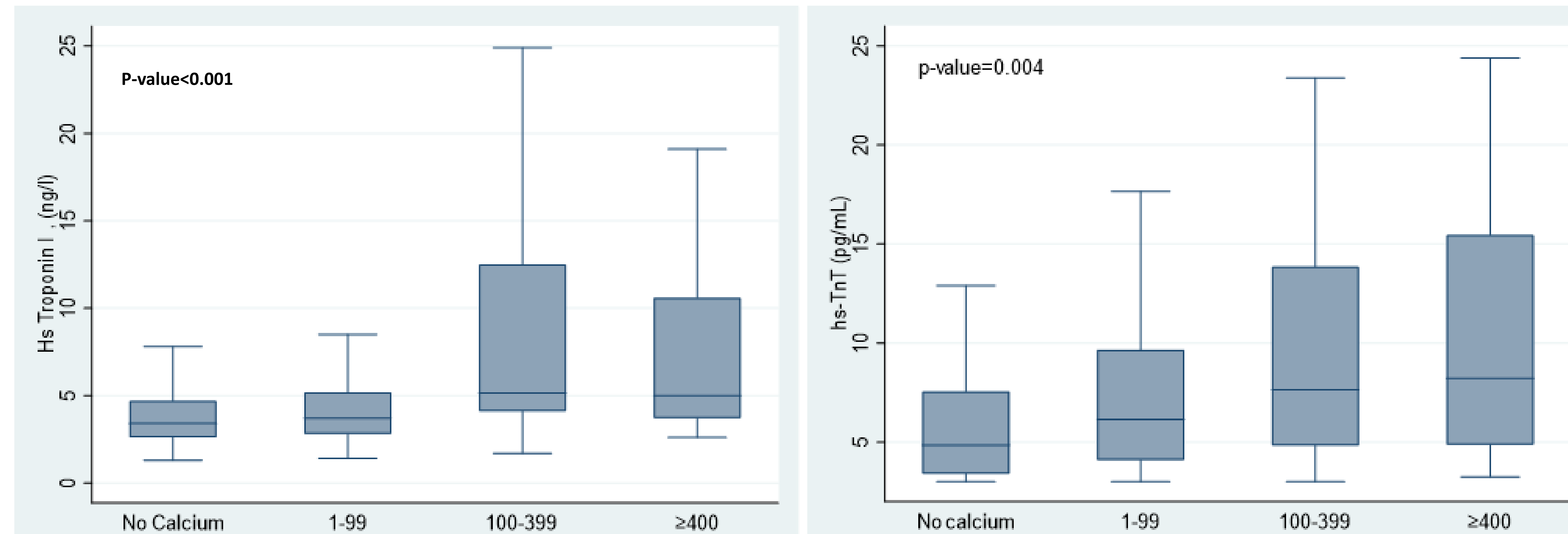


Figure: Box and whisker plot of **hs-cTnI** with a median of 3.7 (IQR 2.7-5.2) pg/ml (left panel) and **hs-cTnT** with a median of 5.5 (IQR 3.8 to 8.7) pg/mL (right panel) concentrations by Agatston score category.

- Multivariable logistic regression model was used to investigate the factors associated with Agatston score ≥100 in Table as below.

| Predictor | Univariate Logistic Regression | | | Univariate Logistic Regression | | |
|-----------------------------|--------------------------------|-----------|------------------|--------------------------------|------------|------------------|
| | OR | 95% CI | P value | OR | 95% CI | P value |
| Agatston score ≥ 100 | | | | | | |
| Hs-cTnI (ln) | 3.92 | 2.46-6.24 | <0.001 | 2.83 | 1.69-4.75 | <0.001 |
| Hs-cTnT (ln) | 2.75 | 1.74-4.33 | <0.001 | 1.47 | 0.87-2.50 | 0.154 |
| Male gender | 3.58 | 1.68-7.60 | 0.001 | 2.39 | 1.04-5.49 | 0.039 |
| Age | 1.09 | 1.04-1.14 | <0.001 | 1.06 | 1.001-1.12 | 0.044 |
| Hypertension | 4.03 | 2.21-7.38 | <0.001 | 2.25 | 1.15-4.39 | 0.017 |
| Diabetes | 4.11 | 2.11-8.01 | <0.001 | 2.00 | 0.95-4.21 | 0.069 |
| Waist circumference | 1.07 | 1.04-1.11 | <0.001 | 1.05 | 1.01-1.08 | 0.011 |
| Serum creatinine | 2.73 | 1.00-7.45 | 0.049 | 0.44 | 0.11-1.72 | 0.240 |

- Both hs-cTn concentrations were positively correlated with the Agatston score.
- The correlation coefficient of 0.28 (p value <0.001) for hs-cTnI and 0.27 (p value <0.001) for hs-cTnT.

CONCLUSIONS

- Among the well-controlled aging Asian PLHIV without established CV disease, the hs-cTnI levels were correlated with subclinical coronary atherosclerosis, measured with Agatston score ≥100.
- Hs-cTnI may be a potential biomarker to detect CVD early among older PLHIV.
- Clinical significance of hs-cTnI and Agatston score > 100 with long-term adverse CV outcomes needs to be prospectively evaluated.

References:

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