# PEOPLE WITH WELL CONTROLLED HIV DO NOT HAVE ELEVATED MARKERS OF EARLY HEART FAILURE COMPARED WITH THE GENERAL POPULATION

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**Background:**
Left ventricular strain (LVS) is an early echocardiographic (TTE) marker for those who are developing cardiac dysfunction but do not yet have impaired left ventricular function. This may allow identification of individuals for earlier targeted intervention to prevent development of clinical heart failure.

**Methods:**
A prospective analysis of TTE findings in adult people with HIV (PWH) (n=98) and age and sex-matched HIV-negative controls (n=50) was performed. All participants with HIV were on antiretroviral therapy (ART). Individuals were excluded if they had a history of cardiac disease. Participants were assessed at a single visit following an overnight fast for TTE, blood sampling and recording of medical and social history (including diet, exercise, drug use). The primary outcome was the difference in LVS between individuals with and without HIV. Secondary outcomes included differences in LV systolic and diastolic function. Analyses were repeated with participants with HIV divided into those who had or had not been exposed to older ART (DDI, D4T, AZT, DDC) to determine if prior exposure to these agents was associated with subclinical heart failure.

**Results:**
Participants were predominantly Caucasian, male (132 (89.2%)), median age 53 years. PWH were more likely to have a diagnosis of hypertension and to be current or ex-cigarette smokers. PWH had lower HDL cholesterol and body mass indexes, higher resting heart rates and higher rates of prior hepatitis C infection. 49 PWHIV had been exposed to at least one of the older toxic ART. PWH drank less alcohol but had greater drug use and were less likely to have undertaken vigorous activity in the last week.

In univariate analysis PWH had higher LVS (-19.9 (IQR -21.3 - -18.8)) compared with controls (-21.0 (-22.3 – -19.6), p=0.034). There was no difference in LV ejection fraction and in general PWH demonstrated less evidence of early systolic dysfunction. In logistic regression following adjustment for heart rate, LVS was no longer significantly different between those with and without HIV but the other markers remained lower in HIV. Suggesting that the univariate findings may have been the result of differences in physical fitness between the groups. In multivariate analysis higher LVS was associated with male gender, heart rate, and glucose level. Older ART was not associated with LVS but was associated with mild diastolic and right heart dysfunction.

**Conclusion:**
People with well controlled HIV do not have increased rates of early heart failure or LVS compared with age and sex matched HIV negative controls. This supports the critical importance of maintaining viral suppression in PWH with non-cardiac toxic ART to minimize cardiac complications.

**Disclosure of Interest Statement:**
The authors have not conflicts of interest relevant to this paper to declare.