**THREE-DIMENSIONAL SPECKLE TRACKING ECHOCARDIOGRAPHIC EVALUATION OF BIVENTRICULAR FUNCTION IN ADOLESCENTS AND YOUNG ADULTS WITH HUMAN IMMUNODEFICIENCY VIRUS INFECTION ACQUIRED IN EARLY LIFE**

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**Objective:** The pathogenesis of left ventricular (LV) dysfunction in HIV patients includes cardiac direct effects of HIV, the presence of autoantibodies, myocardial inflammatory response to viruses, other infections related to the immune status of patients and side effects associated with antiretroviral drugs or other drugs used for the management of HIV. The purpose of our study was to evaluate biventricular parameters of wall deformation with three-dimensional speckle tracking echocardiography (3DSTE) in HIV-infected patients on antiretroviral therapy in order to detect a possible subclinical myocardial dysfunction.

**Method:** Eighteen patients aged 14 to 33years vertically infected with human immunodeficiency virus and 18 normal controls of the same age and sex were studied with 3DSTE. All patients were on HAART, stable in terms of HIV infection, with no history of heart disease or other chronic systemic disease except HIV infection. Standard echocardiographic measures of LV-RV function were assessed. LV global longitudinal strain (GLS), circumferential and radial strains were calculated. Global area strain (GAS) was calculated by 3DSTE as percentage variation in surface area defined by the longitudinal and circumferential strain vectors. Right ventricular (RV) 3D global and free-wall longitudinal strain were obtained.

**Results:** LV GLS and GAS were lower in HIV patients compared to normal controls (p=0.021, and p=0.004, respectively). There were no significant differences in ejection fractions between the groups. There was a weak positive relationship between LV GLS and age (r=0.418, p=0.039) and a weak negative relationship between LV GLS and CD4 T-cell count (r=0.304, p=0.047). RV free-wall longitudinal strain was significantly reduced in HIV patients when compared with the control group (p=0.023). No patient had pulmonary systolic pressure higher than 35mmHg.

**Conclusion:** Three-dimensional speckle tracking echocardiography is helpful in identifying HIV patients at high cardiovascular risk by allowing early detection of biventricular dysfunction in the absence of pulmonary hypertension.