Name of the candidate : Samiha Mohamed Sayed Gaballah

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Title of the thesis: Assessment of left ventricular function by Tow-Dimensional Speckle Tracking Strain in patient with Pulmonary Hypertension.

Supervisors:1-Prof.Dr.Khaled Ahmed Imam Elkhashab

2-Dr.Eman Mahmoud Abdelfattah Mohamed

Abstract

Background: Pulmonary hypertension is serious disease often accompanied with right ventricular dysfunction and failure and survival in patients with pulmonary hypertension is strongly related to right ventricular function. Although pulmonary hypertension is defined by normal left ventricular (LV) filling pressures LV performance may be affected because both ventricles share in the ventricular septum within the same pericardial sac also progressive pressure load leads to bowing of the septum towards the left ventricle therefore disturbing the LV geometry and impairing LV filling in addition .**Aim of the study**: To evaluate the left ventricular function in PH patients using the novel Echo method Speckle tracking strain.

Methods: Fifty patients with PH and fifty healthy control subjects were included .Physical examinations, ECG and complete echocardiographic assessment including most of parameters measuring the RV function and speckle tracking strain method was used to assess the LV and RV function. **Results:** LV Function by strain was significantly impaired in PH patients both circumferential and longitudinal LV global circumferential strain (LV GCS) mean value =(-15.8±6.4) versus (-23.5±1.5)in control group and LV global longitudinal strain (LV GLS) mean value =(-16.7±5.4) in PH versus (-21.6±6.7) in control group and the impairment with more in the LV septal longitudinal strain compared to lateral longitudinal strain and more in LV lateral circumferential strain than LV septal circumferential strain. **Conclusions:** The study showed that in patients with pulmonary hypertension chronic RV pressure overload directly affects RV systolic function and the RV pressure overload further impairs LV longitudinal and circumferential systolic deformation measured with 2D speckle tacking method irrespective of the ventricular septal involvement .

Keywards: pulmonary hypertension –strain speckle tracking –LV function**.**