

# Value of Speckle Tracking Echocardiography for Early Detection of Left Ventricular Dysfunction in Patients with Systemic Lupus Erythematosus

Shereen Ibrahim Farag<sup>2</sup>, Reda Biomy Bastawisy<sup>1</sup>, Mohamed Ahmed Hamouda<sup>2</sup>, Wael Anwer Hassib<sup>1</sup>, Hala Ahmed Wahdan<sup>1</sup>

## ABSTRACT

### BACKGROUND:

Cardiac dysfunction due to systemic lupus erythematosus (SLE) may be subclinical, but those patients are at high risk for developing clinical heart failure.

### OBJECTIVE:

The aim of this study is to assess the role of speckle tracking echocardiography (STE) in the early detection of systolic dysfunction in SLE patients.

### METHODS:

This was a case-control study. Participants were subdivided into two groups: Group 1 included 50 SLE patients and Group 2 included 50 healthy controls. Clinical evaluation, echocardiography, tissue Doppler, and STE were performed.

### RESULTS:

Global longitudinal strain (GLS) was significantly reduced in SLE group ( $-18.95 \pm 2.02$  vs.  $-21.4 \pm 2.1$ ,  $P < 0.001$ ). However, there was no significant

difference in left ventricular ejection fraction between both groups ( $P = 0.801$ ). There was a significant positive correlation between the disease duration and age ( $r = 0.480$ ,  $P < 0.001$ ), pulmonary artery systolic pressure (PASP) ( $r = 0.628$ ,  $P < 0.001$ ), and GLS (%) ( $r = 0.417$ ,  $P = 0.012$ ). There was also a significant positive correlation between the disease activity index and GLS (%) ( $r = 0.7$ ,  $P < 0.001$ ) and PASP ( $r = 0.522$ ,  $P < 0.001$ ).

### CONCLUSION:

SLE group had GLS % lower than the control group, and this was statistically significant, denoting early systolic dysfunction. Longer duration and high SLE activity index significantly affect GLS. GLS is an excellent noninvasive tool for early detection of subclinical left ventricular systolic dysfunction in SLE patients.

### KEYWORDS:

Speckle tracking echocardiography, systemic lupus erythematosus, ventricular function

1- Department of Cardiology, Faculty of Medicine, Kafer Elsheitk University, Kafer Elsheitk, Egypt

2- Department of Cardiology, Faculty of Medicine, Benha University, Benha