

<i>University of Baghdad</i>				
<b>College Name</b>	<b>Medicine</b>			
<b>Department</b>	<b>in Echocardiography</b>			
<b>Full name as written in passport</b>	<b>Israa Ali Sadeq</b>			
<b>e-mail</b>				
<b>Career</b>	◉ Assistant Lecturer	◉ Lecturer	◉ Assistant Professor	◉ Professor
	◉ Master		◉ PhD	◉ Diploma
<b>Thesis Title</b>	<b>Detection of Subclinical Left Ventricular Systolic Dysfunction in Patient Treated with Anthracycline Chemotherapy: A Comparative Analysis Between Different LV Systolic Echocardiographic Parameters</b>			
<b>Year</b>	<b>2016</b>			
<b>Abstract</b>	<p><b>Anthracycline chemotherapeutic agents are undermined by their cardiotoxicity. As life expectancy following treatment is greatly improved, techniques that ensure early detection of cardiotoxicity are essential.</b></p> <p><b>Aims:</b></p> <ol style="list-style-type: none"> <li><b>1. Detection of subclinical left ventricular systolic dysfunction in patient treated with anthracycline chemotherapy.</b></li> <li><b>2. Comparative analysis between different LV systolic parameters measured by echocardiography.</b></li> </ol> <p><b>Patients' and Methods:</b></p> <p><b>Prospective study conducted in Baghdad Teaching Hospital – cardiac department for Six months, from January 2016 to June 2016. Patients referred to echocardiography laboratory from the hematology department for LV function assessment before or during chemotherapy.</b></p> <p><b>All patients - being treated with anthracycline chemotherapy - were examined by an echocardiogram at baseline and after three months using 2D, M Mode, Tissue Doppler imaging and speckle tracking imaging.</b></p> <p><b>Examination involved LVEF, MAPSE, tissue Doppler septal S' velocity and GLS.</b></p>			

## **IX**

### **Results:**

**Seventy-eight participants ;46 females (59%) and 32 males (41%)**

**with a mean age of  $47 \pm 16$  years were prospectively studied.**

**Global systolic strain was significantly reduced after three months of**

**anthracyclines chemotherapy (  $-21.2 \pm 2.4\%$  to  $-19 \pm 2.2\%$  ( $p < 0.0001$ ))**

**with 13% relative reduction.**

**A non-uniform reduction in strain was observed each time with**

**relative sparing of the LV apex. LVEF remained largely unchanged at both**

**time points( $64 \pm 5\%$  to  $62 \pm 5\%$  ( $p < 0.03$ )) with only 3% relative reduction.**

**A significant reduction in tissue Doppler septal S' velocity( $8.2 \pm 1.6$**

**to $7.3 \pm 1.1$ cm/s ( $p = 0.01$ )) was seen after anthracycline therapy with 11%**

**relative reduction.**

**MAPSE was significantly reduced after 3 months of completing**

**anthracycline chemotherapy ( $11.76 \pm 1.9$ mm) than baseline visit ( $10.64 \pm$**

**$1.95$ mm) ( $p = 0.016$ ) with 9% relative reduction.**

### **Conclusions:**

**Myocardial strain imaging is the most sensitive technique for the**

**early detection of LV systolic dysfunction following**

**anthracycline**

**chemotherapy.**

**Also, the use of mitral annular displacement by M-mode echocardiography and/or peak systolic velocity (S') of the mitral annulus by**

**pulsed-wave DTI can be a reliable alternative for**

**quantification of LV**

**longitudinal function.**