

# PROTOCOL: CHEMOTHERAPY & RECENT CHEST RADIATION

## Inclusion Criteria

- Echocardiogram order specifically requests strain imaging in an oncology/hematology patient
- Echocardiogram order to assess left ventricular function in patients with i) breast cancer, lymphoma, or sarcoma, ii) prior to or within three years of potentially cardiotoxic chemotherapy, iii) prior to or within 3 years of chest radiotherapy
- Otherwise, if a non-strain echo is ordered, you do not need to do the strain protocol just because the patient has a history of cancer e.g. prostate, colon, bladder, brain cancer

## EIMS Data

**Procedure Components:** 2-D, 3-D, Doppler, Strain Imaging

**Serial Studies:** General, Oncology

**First Finding:** Echocardiogram performed per chemotherapy protocol to assess left ventricular function.

**Second Finding:** Last full echocardiogram performed (*date*).

**Billing Diagnosis:** Monitoring Cardiotoxic Drug Pre Chemotherapy (or Post Chemotherapy)

**Procedure:**  $\geq 6$  months = (TTE) 2D Echo Doppler Color <6 months = (TTE) 2D Limited with Limited Doppler

**Charge Capture:** Myocardial Strain – Hospital

Obtain the following if the last echo was:	
$\geq 2$ years	Full echo + LV longitudinal strain <i>If last full echo <math>\geq 2</math> years, perform full echo regardless of more recent limited exams</i>
6 months < 2 years	LV function protocol + LV longitudinal strain
< 6 months	Follow table below <i>unless last or current study is abnormal, then perform 6 months &lt; 2 year protocol, more as warranted</i>

2D	CFI	Doppler	Measurement
<b>Apical</b>			
4 CH LAX 2 CH Apical SAX		LVOT TVI <sup>†</sup> TR velocity	LV volumes & EF (3D preferred)* LV strain
<b>Subcostal</b>			
IVC			
<b>STOP HERE</b> if LV Volumes provided diagnostic SV & EF and if Regionals and were well visualized...			
<b>Parasternal</b> ...if necessary, image the following <u>only as needed</u> ...			
SAX RWMA-base/mid/apex			
LV EF & RWMA			LVIDd/s LVOTd <sup>†</sup>

\* Have a low threshold for the use of myocardial enhancement imaging to improve quality of biplane images (use image enhance after strain acquisition)

<sup>†</sup> Previous LVOT diameter may be used if serially consistent.

## Caveats and Tips

- If LVEF drops by  $\geq 10\%$  to less than 53% - add the statement "Cardio-oncology clinic consult recommended" to Final Impressions
- If the GLS drops by 15% (approximately an absolute change of 3%) - even if the strain remains normal or the LVEF is normal - add the statement "Cardiology / cardio-oncology clinic consult recommended" to Final Impressions
- If RVSP >55 mmHg – add RV dimensions, FAC (fractional area change), TAPSE, RV strain and add the statement "Cardio-oncology clinic consult recommended" to Final Impressions