

PROTOCOL: VA ECMO WEAN

Inclusion Criteria

- Study indication is VA ECMO wean

EIMS Data

Procedure Components: 2-D, Color Flow Doppler, Doppler Limited, +/- 3-D, Strain

Serial Study: General

First Finding: Echocardiogram performed per VA ECMO wean protocol.

Billing Diagnosis: ECMO VA

Procedure: (TTE) 2D Limited with Color and Doppler

Charge Capture: Myocardial Strain - Hospital

BASELINE AND LOWEST FLOW

2D	CFI	Doppler	2D Measurement
Parasternal			
LV EF & RWMA AV opening/function	AR MR		LVID d/s if biplane or 3D LVEF are not feasible
Apical			
LV EF & RWMA RV size / fx	MR TR	LVOT TVI* Lateral mitral s'	LV – volumes / EF RV –strain† or RV s' & TAPSE RV – 3D volumes† or area d/s

EACH STAGE OF WEAN

2D	CFI	Doppler	2D Measurement
Parasternal			
LV EF (visual) & RWMA			
Apical			
LV EF (visual) & RWMA RV size / fx (visual)	MR TR	LVOT TVI	

* Previous LVOT diameter may be used if serially consistent

† RV strain and RV 3D volumes are preferred methods

Caveats and Tips

- Echo consultant must be present at the bedside during ECMO wean
- ECMO wean stages are typically baseline, 75%, 50%, 25%, 1L, off (if patient will tolerate)
- Please annotate ECMO flow rate and inotropes at each stage of weaning

Predicting Outcomes in VA ECMO

	Favorable	Unfavorable
LVEF	LVEF > 20%-25%	LVEF trends lower with weaning LVEF < 20%
LVOT VTI	VTI \geq 10cm	VTI < 10cm
Lateral mitral S'	\geq 6-8cm/s	< 6cm/s
RVEF/RV FAC	Unchanged or improved with weaning	Lower RVEF/ FAC with weaning