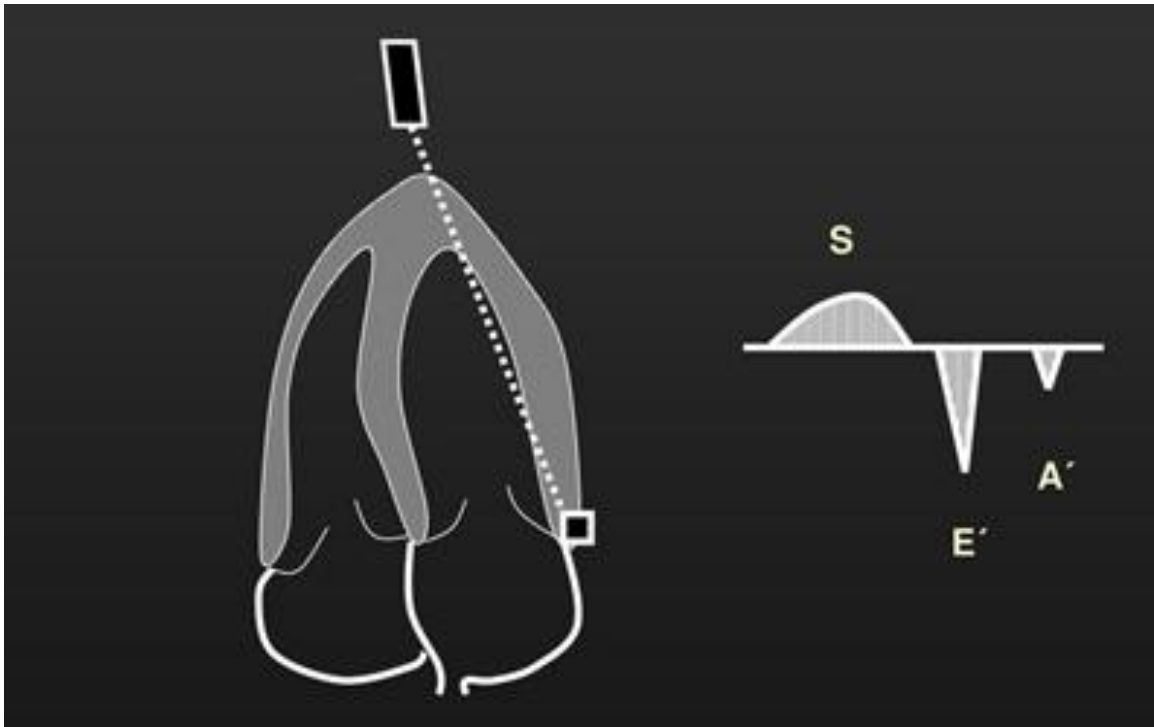


Ward 118 Veno-arterial ECLS

Weaning trial guide



REF: Aissaoui N, Luyt CE, Leprince P, Trouillet JL, Léger P, Pavie A, Diebold B, Chastre J, Combes A. Predictors of successful extracorporeal membrane oxygenation (ECMO) weaning after assistance for refractory cardiogenic shock. *Intensive Care Med.* 2011 Nov;37(11):1738-45

VA ECLS
Weaning trial

- Minimal or no inotropes
- Pulsatile waveform on arterial line
- FIO₂ & Minute Ventilation acceptable
- Overall haemodynamic stability

Stop trial if patient
unstable

- Assess Transthoracic windows-if poor organise TOE
- Increase anticoagulation e.g bolus heparin 2500 units
- Do not turn off the sweep gas and keep FIO₂ the same

Qualitative ECHO
Assessment

- Reduce circuit blood flow rate sequentially by 0.5L/min every 5 minutes lowest 1L/minute
- Perform **qualitative** Echo at each decrement looking for RV dilatation, LV systolic impairment, worsening haemodynamics or oxygenation

Quantitative ECHO
assessment

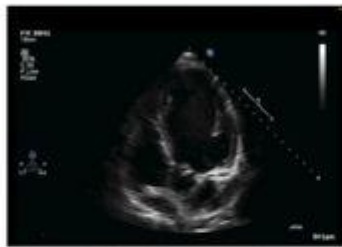
- At circuit flows of 1L/minute perform **quantitative** echo and measure
- LVOT VTI; LVEF; TDSa at lateral mitral annulus; TAPSE

ECHO markers
suggestive of
success

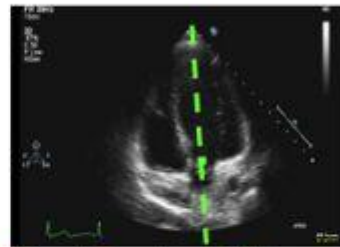
- LVOT VTI=>10cm
- LVEF =>20%
- TDSa lateral mitral annulus=>6cm/s
- TAPSE=>12mm
- REF: Aissaoui N, Luyt CE, Leprince P, Trouillet JL, Léger P, Pavie A, Diebold B, Chastre J, Combes A. Predictors of successful extracorporeal membrane oxygenation (ECMO) weaning after assistance for refractory cardiogenic shock. Intensive Care Med. 2011 Nov;37(11):1738-45

3. Measurement of LVOT VTI

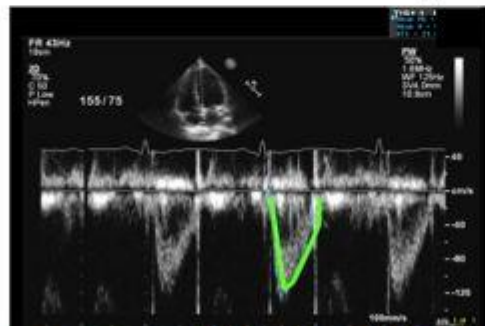
The amount of blood going through the LVOT is given by the VTI (velocity time integral) of the flow, obtained by tracing the signal's envelope:



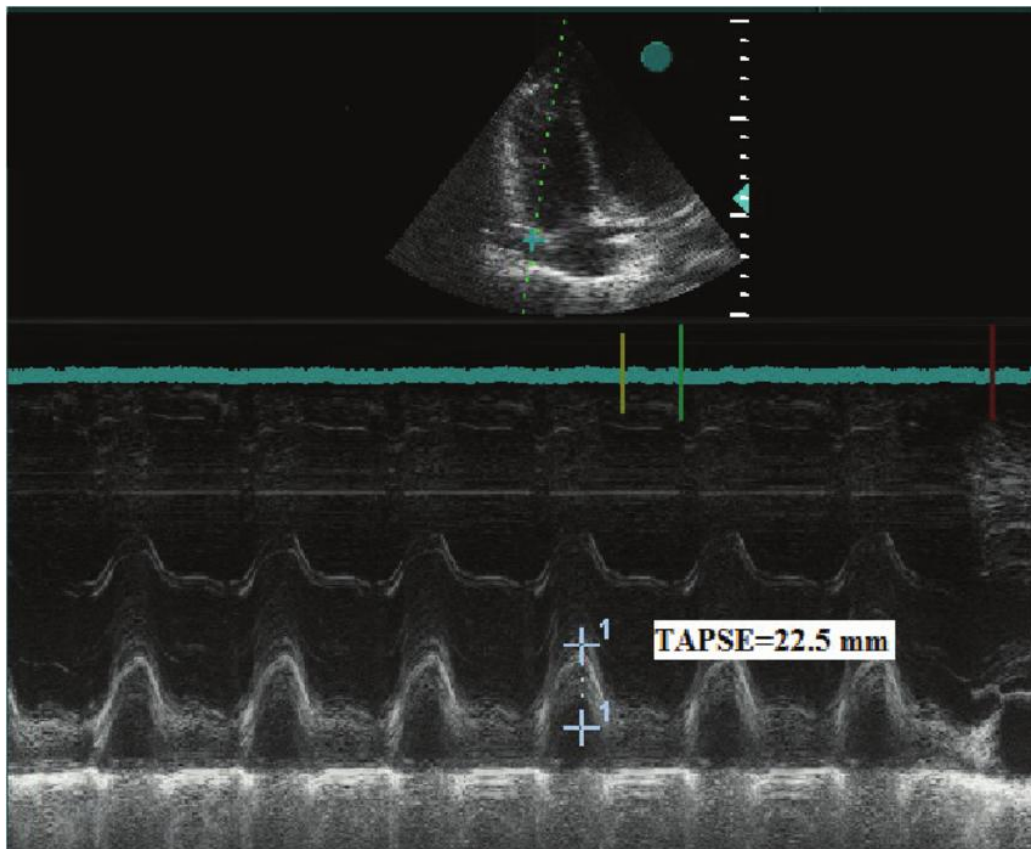
Apical 5 chamber



Pulsed Doppler (PW) sample in LVOT
+++ Doppler beam MUST be aligned with the LV outflow +++

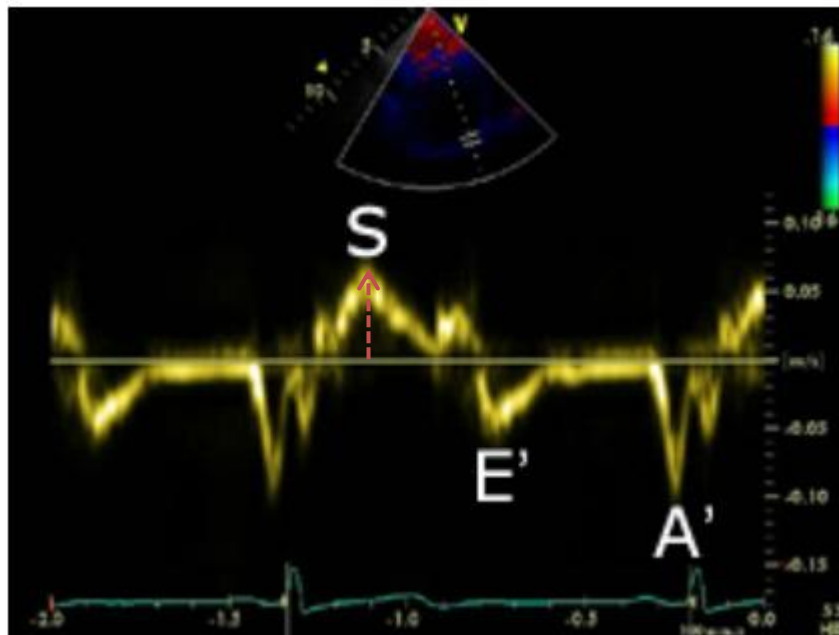
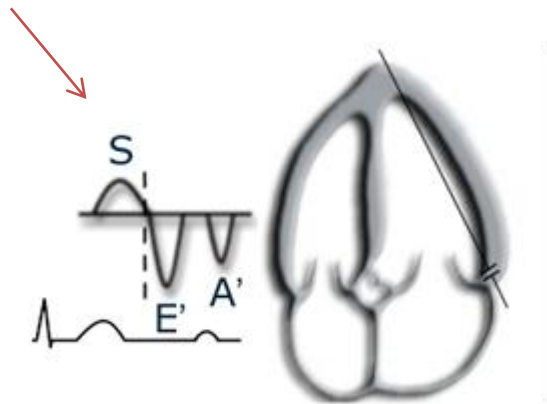


Trace envelope of LVOT flow → VTI of LVOT



Tissue doppler at the lateral mitral annulus

Measure the height of S' above baseline



Patient label

VA ECMO Weaning Trial

Haemodynamic ECHO Chart

Prerequisites:

1. Circuit Blood flow rate at 1L/minute
2. Haemodynamically stable patient
3. Adequate TTE apical views OR TOE
4. Anticoagulation increased for duration of weaning trial eg 2500 units heparin at start

Measurement	Value	Markers of success
RV/LV ratio:	≤ 0.6 <input type="checkbox"/> ≥ 1.0	≤ 1.0
TAPSE:	= mm	>12mm
LVOT VTI	= cm	>10cm
LVEF	= %	>20%
TDSa lateral mitral	= cm/s	>6cm/s