

Determine **risk score** by combining the scores from diagnostic group ① and clinical modifier ②
 Ensure no absolute contraindication ③ present
 Use chart ④ to establish eligibility and expected outcome for VA ECMO support

<p>① Diagnostic group</p> <p><i>Favourable Diagnostic Categories (Score =1)</i></p> <ul style="list-style-type: none"> • Fulminant myocarditis • Pulmonary embolism with cardiogenic shock • First presentation cardiomyopathy • Primary arrhythmogenic cardiomyopathy • Drug overdose with cardiac depression and no long-term sequelae • Primary graft dysfunction post heart transplant • Ischaemic VSD post AMI <p><i>High Risk Diagnostic Categories (Score =2)</i></p> <ul style="list-style-type: none"> • AMI with early reperfusion • Papillary muscle rupture/ mitral regurgitation with AMI • Failure to wean off cardiopulmonary bypass • Heart transplant recipient with acute rejection suitable for VAD* <p><i>Unfavourable Diagnostic Categories (Score =3)</i></p> <ul style="list-style-type: none"> • AMI with delayed or failed reperfusion • Heart transplant recipient with chronic rejection suitable for VAD* • Chronic cardiomyopathy not suitable for bridge to VAD* (sepsis and/or renal failure) • HOCM associated heart failure • Restrictive chronic cardiomyopathy • Adult septic shock 	<p>② Clinical modifier</p> <p>Score chronic co-morbidities and acute clinical state</p> <p>Chronic - one or more present (Score +1)</p> <ul style="list-style-type: none"> • Peripheral vascular disease (symptomatic, revascularised or amputation) • Previously known ischaemic heart disease or prior revascularisation • Prior valve surgery, CABG or aortic surgery • Moderate COPD (GOLD Stage II, FEV1 50-80%) • Chronic renal failure stage 3 or 4 CKD (eGFR 60-15) • Chronic liver disease • Long-term immunosuppression <p>Acute - one or more present (Score +1)</p> <ul style="list-style-type: none"> • Lactate ≥ 10 • AST or ALT > 1000, or, INR > 3.0 • Anuria > 4 hours
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③ Absolute contraindications

Patient profile

- Age > 75
- Terminal illness or non-treatable malignancy
- Liver cirrhosis Child-Pugh B or C
- Irreversible CNS injury
- Chronic renal failure CKD 5 or dialysis (unless for parallel kidney transplant)
- End stage COPD
- Chronic symptomatic cardiac failure (NYHA 3 or 4) and not a VAD/transplant candidate
- ECMO initiation would not be in keeping with known patient wishes or that of the patient's medical treatment decision maker (MTDM)

Anatomical consideration

- Inability to cannulate safely due to vascular pathology (e.g. multiple stenosed or thrombosed vessels)
- Moderate or severe aortic regurgitation with no potential for non-surgical correction

Acute condition

- Cardiogenic shock with advanced microcirculatory failure with severe mottling or established peripheral purpura
- Cerebral deficit with fixed dilated pupils

④ Eligibility chart

5	Red	Black	Black	Black
4	Yellow	Red	Red	Black
3	Green	Yellow	Yellow	Red
1-2	Green	Green	Green	Yellow
	<40	40-54	55-64	65-75

The chart indicates eligibility and expected outcome for VA ECMO according to patient age and risk score (1-5) which is the diagnostic group 1, 2 or 3 plus presence of acute (+1) and/or chronic modifiers (+1).

GREEN Good expected outcome
YELLOW Uncertain expected outcome
RED Poor expected outcome/ minimal benefit
BLACK Negligible

*suitability for a durable ventricular assist device (VAD) or heart transplant is viewed as equivalent here and covered in more detail under bridge to transplant
 Comments: Patient selection for ECPR scenarios and peri-procedural support in the cardiac catheter lab are not covered with this patient selection tool.