Supplementary material

Josiassen J, Frydland M, Hassager C, et al. Randomised clinical trials of patients with acute myocardial infarction-related cardiogenic shock: a systematic review of used cardiogenic shock definitions and outcomes. Kardiol Pol. 2021.

Table S1. Ongoing and future trials

Study name	Sample Size	Intervention	Length of follow-up	Primary endpoint	Main secondary endpoints
DANGER-shock	360	Impella CP vs no Impella CP	180 days	180-day mortality	Composite of cardiovascular events (need for additional mechanical support)
ECLS-SHOCK	420	ECLS vs No ECLS	12 months	30-day mortality	Time to death within 6- and 12-months follow-up
Dafsah A. Juzar	92	IABP vs No IABP	30 days	30-day mortality	–
COCCA	380	Hydrocortisone + Flucortac vs Placebo	90 days	Patients not treated with corticosteroids at day 7	Mortality at 28 and 90 days after randomisation. Change in cardiac index
REVERSE	96	VA-ECMO + Impella CP ss VA-ECMO	60 days	30-day survival, free from mechanical circulatory support, heart transplantation or inotropic support	Survival to discharge
ECMO-CS	120	VA-ECMO vs No VA-ECMO	12 months	30-day composite of death from any cause, resuscitated circulatory arrest, and implantation of another MCS	30-day, 6 months and 12 months all-cause mortality

DAPT-SHOCK-AMI	304	CANGRELOR vs TICAGRELOR	12 months	30-day combined endpoint of death/MI/stroke	Individual components of the primary endpoint
ANCHOR	400	VA-ECMO + IABP vs No VA-ECMO + IABP	12 months	30-day treatment failure. 30-mortality death in the ECMO group and death OR rescue ECMO in the control group	30-day all-cause mortality MACE

Abbreviations: ECLS, extracorporeal life support; ECMO, extracorporeal membrane oxygenation; IABP, intra-aortic balloon pump; MACE, major adverse cardiovascular events; MCS, mechanical circulatory support; MI, myocardial infarction; OR, odds ratio; VA-ECMO, veno-arterial ECMO

Table S2. Ongoing and future trials

Study name	Inclusion criteria	Exclusion criteria	Including comatose out-hospital cardiac arrest patients?
DANGER-shock	**Blood pressure:** — Systolic blood pressure <100 mm Hg for >30 minutes or catecholamines required **Cardiac function:** — LVEF <45% **End-organ perfusion:** — Arterial lactate >2.5 mmol/l **Other:** STEMI	— CS duration >24 hours — Mechanical cause of CS — Severe valvular disease — Severe peripheral artery disease precluding Impella insertion — VA-ECMO — Mechanical aortic valve prosthesis — Infective endocarditis — Predominantly RV failure — Left ventricular thrombus — Life expectancy <12 months prior to admission — Out-hospital cardiac arrest with GCS <8 after return of spontaneous circulation	No
ECLS-SHOCK	**Blood pressure:** — Systolic blood pressure <90 mm Hg for > 30 minutes or catecholamines required	— CS duration >12 hours — Resuscitation >45 min — Mechanical cause of cardiogenic shock	Yes

	Cardiac function: – **End-organ perfusion:** — Arterial lactate >3 mmol/l At least 1 of the following: — Altered mental status — Cold, clammy skin and limbs — Urine output <30 ml/h **Other:** –	— Severe peripheral artery disease precluding ECLS insertion — Age > 75 years — Life expectancy <6 months prior to admission — Shock of other cause than AMI — Pregnancy	
Dafsah A. Juzar	None mentioned	— CS duration >12 hours — Resuscitation >30 min — Mechanical cause of cardiogenic shock — Severe valvular disease — Severe peripheral artery disease precluding IABP insertion	Yes
COCCA	**Blood pressure:** — Systolic blood pressure <90 mm Hg or map <65mm Hg for >30 minutes or catecholamines required **Cardiac function:** At least 1 of the following: — cardiac index ≤2.2 l/min/m^2 — LVEF ≤40% — full time velocity (ITV) under aortic ≤18 cm **End-organ perfusion:** At least 1 of the following: — Altered mental status — Marbling — Urine output <25 ml/h — Arterial lactate >2 mmol/l **Other:** At least 1 of the following: — Clinical signs of right or pulmonary congestion — E/A >2 if FEVG ≤40% or E/Ea >13 if LVEF >40% — PAPS >35 mm Hg — PCWP >15 mm Hg — PAPm >25 mm Hg	— CS duration >24 hour — Septic shock — Myocarditis — ECMO prior to randomisation — Pregnancy — Cardiac arrest recovered within the last 7 days — Prior treatment corticosteroid therapy >30 mg — Treatment with one of: ketoconazole, rifampicin, phenytoin, phenobarbital, cyclosporine and clarithromycin	Yes

REVERSE	**Blood pressure:** — Systolic blood pressure <90 mm Hg for >30 minutes or catecholamines required **Cardiac function:** — Cardiac index <1.8 l/min/m^2 or < 2.0 l/min/m^2 on moderate to high doses of inotropes and vasopressor for >30 minutes **End-organ perfusion:** — "signs of tissue hypoxia" **Other:** –	— Non-AMI cause of CS — Sepsis — Resuscitation >20–30 min — TTM treatment — Mechanical aortic valve prosthesis — Recent significant pulmonary embolus — Awaiting transplant or on permanent MCS — Left ventricular thrombus — Severe liver failure — Active malignancy	Yes
ECMO-CS	**Blood pressure and cardiac function:** At least 1 of the following: — Cardiac index < 2.2 l/min/m^2 + norepinephrine dose >0.1 μg/kg/min + dobutamine dose >5 μg/kg/min — Systolic blood pressure <100 mm Hg on norepinephrine dose >0.2 μg/kg/min + dobutamine dose >5 μg/kg/min and LVEF <35% — LVEF 35%–55% in case of severe mitral regurgitation or aortic stenosis **End-organ perfusion:** At least 1 of the following: — Arterial lactate >3 mmol/l (2 consecutive samples) — SvO2 <50% (2 consecutive samples) **Other:** At least 1 of the following: — CVP >7 mm Hg — PCWP >12 mm Hg	— Mechanical cause of shock — Life expectancy <12 months prior to admission — Severe peripheral artery disease precluding ECMO insertion — Hypertrophic obstructive cardiomyopathy — Severe aortic disease — Major bleeding — Aortic dissection — Known encephalopathy	No
DAPT-SHOCK-AMI	**Blood pressure:** — Systolic blood pressure <90 mm Hg for >30 minutes or catecholamines required **Cardiac function:** – **End-organ perfusion:** At least 1 of the following: — Altered mental status — Cyanosis	— Contraindications of antiplatelet therapy with ticagrelor/cangrelor — Administration of P2Y12 inhibitor prior to admission — Need of concomitant anticoagulation therapy due to indications such as atrial fibrillation, artificial valve, thromboembolic disease etc.	Yes

	Other: –		
ANCHOR	**Blood pressure:** - Systolic blood pressure <90 mm Hg for >30 minutes or catecholamines required **Cardiac function:** – **End-organ perfusion:** At least 1 of the following: — Altered mental status — Cold, clammy skin and limbs — Urine output <30 ml/h — Arterial lactate >2 mmol/l **Other:** — Signs of pulmonary congestion	— Resuscitation >30 min — No intrinsic heart action — Expected severe deficit in cerebral function — Mechanical cause of cardiogenic shock — CS duration >24 hours — Patient moribund on the day of randomization or SAPS II >90 — Severe peripheral artery disease precluding ECMO or IABP insertion — Massive pulmonary embolism — Life expectancy <12 months prior to admission — Proven heparin-induced thrombocytopenia — Pregnancy	Yes

Abbreviations: AMI, acute myocardial infarction; CS, cardiogenic shock; CVP, central venous pressure; ECLS, extracorporeal life support; GCS, Glasgow Coma Scale; IABP, intra-aortic balloon pump; LVEF, left ventricular ejection fraction; MCS, mechanical circulatory support; PAPm, pulmonary arterial mean pressure; PAPS, systolic pulmonary arterial pressure; PCWP, pulmonary capillary wedge pressure; RV, right ventricle; SAPS, simplified acute physiology scores; STEMI, ST-segment elevation myocardial infarction; TTM, targeted temperature management; VA-ECMO, veno-arterial extracorporeal membrane oxygenation

Search strategy

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