



STEMI e shock cardiogeno: IABP o assistenza meccanica?

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Novara

“Cardiologia di precisione”
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Presentazione

6 A.M.

Uomo di 49 anni, fumatore senza fattori di rischio.

Giunge in PS con dolore toracico tipico, diaforesi e vomito da 4 ore.

EO: pallido, sudato
PA 110/75 mmHg, FC 90 bpm
Al torace crepitii bibasilar.

Accertamenti iniziali

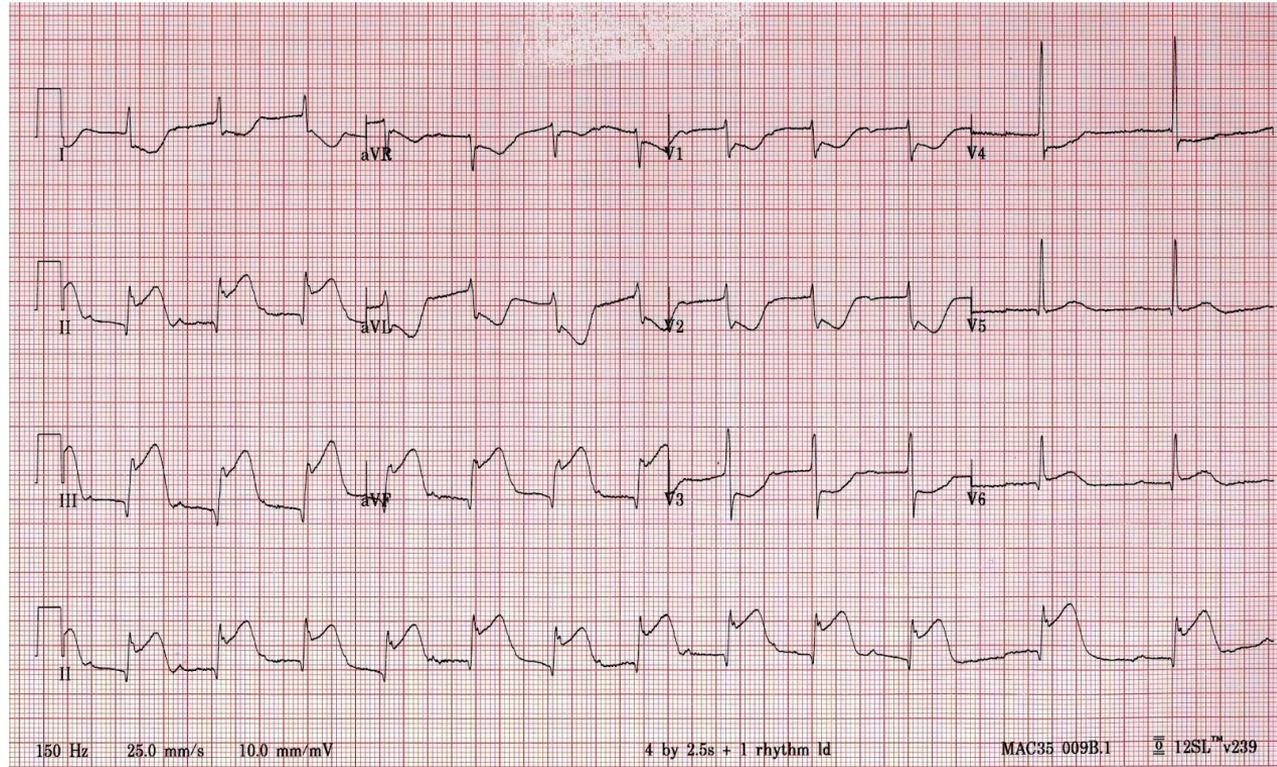
EGA:

pH 7,27

O₂ 122 mmHg

CO₂ 27 mmHg

Lactates 8 mmol/L

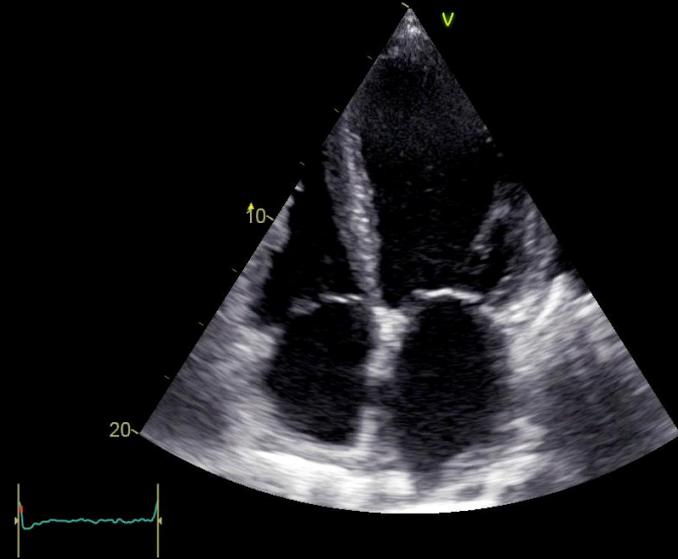


Terapia iniziale

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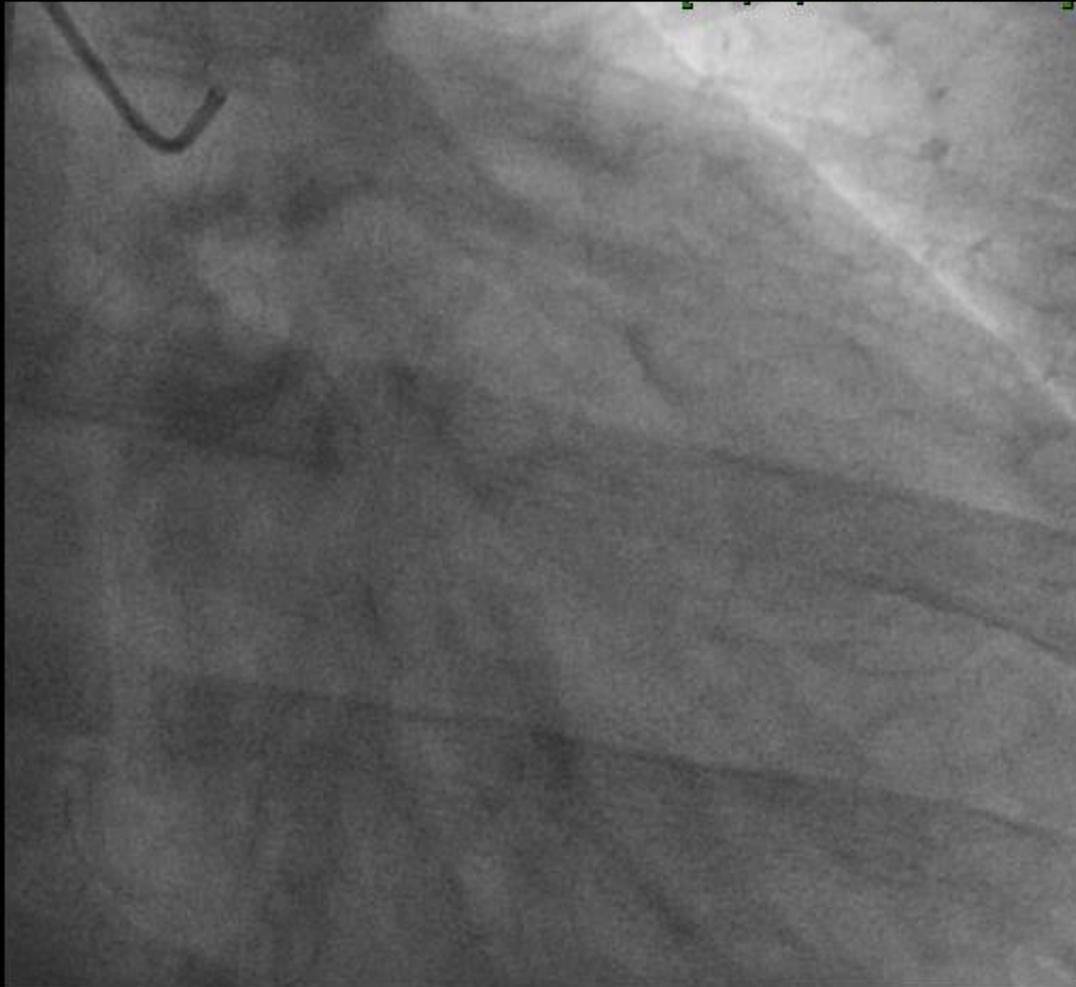
Aspegic 250 mg.
ticagrelor 180 mg
Eparina 5000 UI

Attivazione della sala di emodinamica

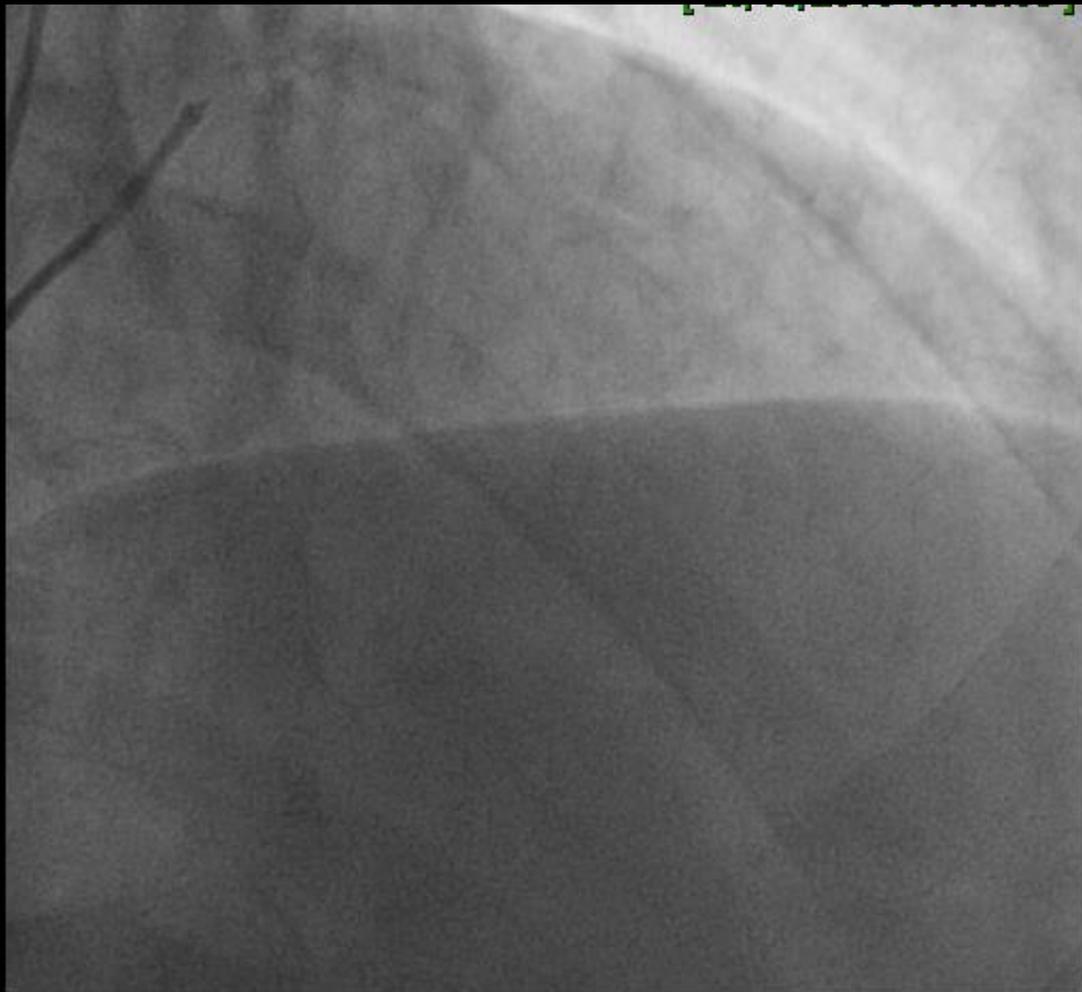




Occlusione di CD



OM2 occlusal con flusso
collaterale da DG



Occlusione di IVA media

Management

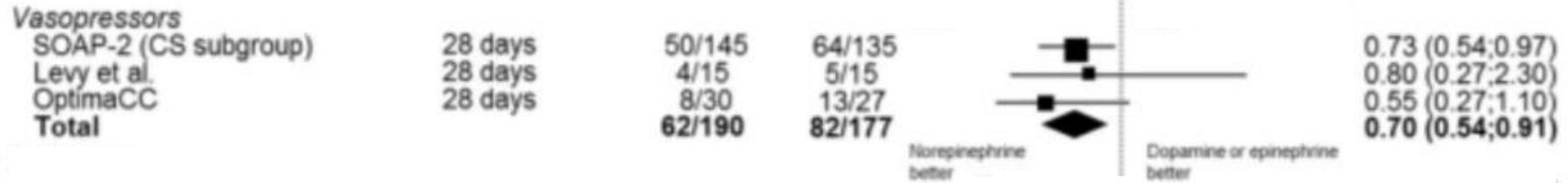
Il paziente ha sviluppato rapidamente uno shock cardiaco senza risposta agli inotropi.

Strategia?

- Vasopressori
- IABP
- Impella
- ECMO



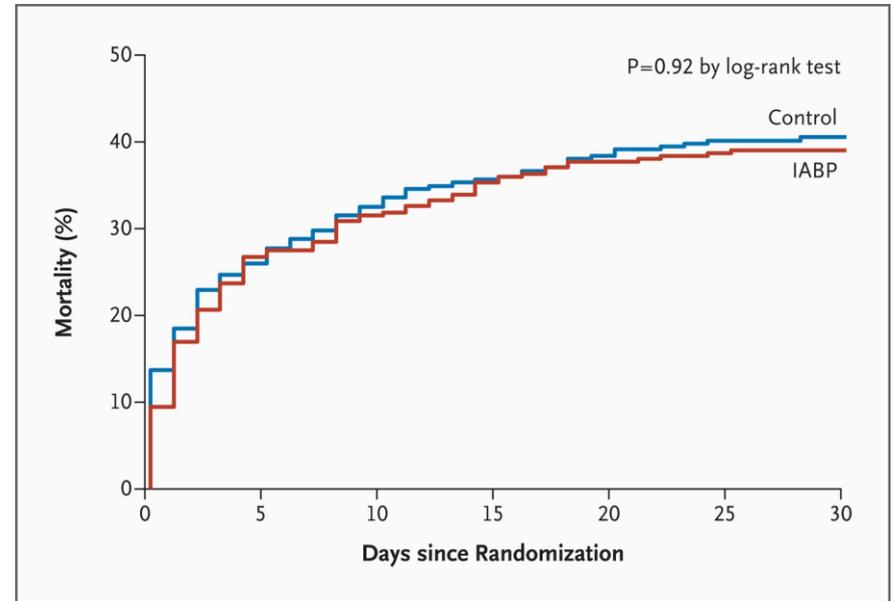
Vasopressori



2017 ESC Guidelines for the management of STEMI patients

Recommendations	Class ^a	Level ^b
Routine intra-aortic balloon pumping is not indicated. ^{177,437}	III	B

IABP-SHOCK II Trial



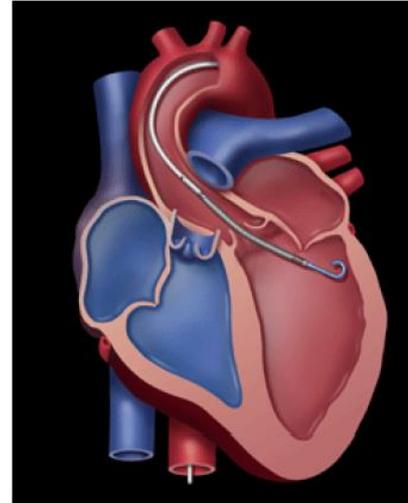
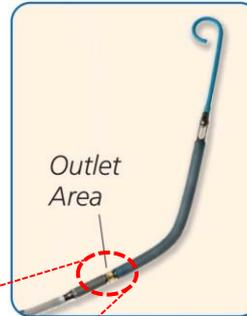
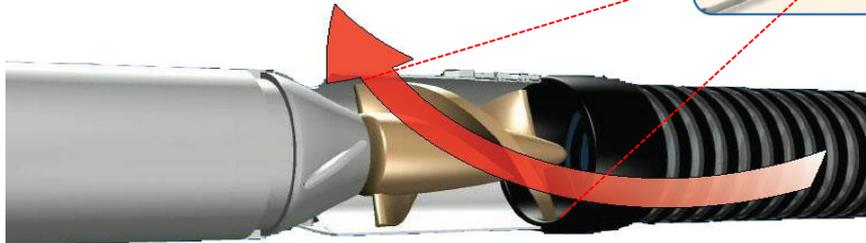
IMPELLA CP

micro-axial pump generating a continuous flow into ascending aorta

14 Fr Percutaneous via Introducer Sheath

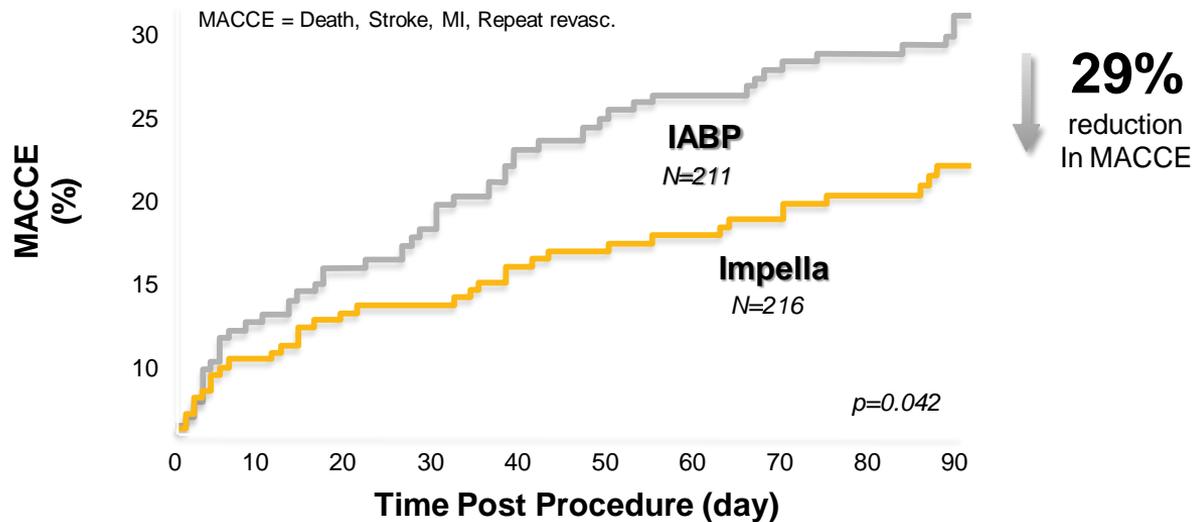
Very easy-friendly to implant and to control

Flow rate 4 l/min



PROTECT II study

MACCE



Management

Si ottiene una linea venosa ed arteriosa femorale e si impianta un contropulsatore aortico.





PCI con 2 DES impiantati
nella coronaria destr

... Subito dopo il paziente
va incontro ad arresto
cardiocircolatorio refrattario



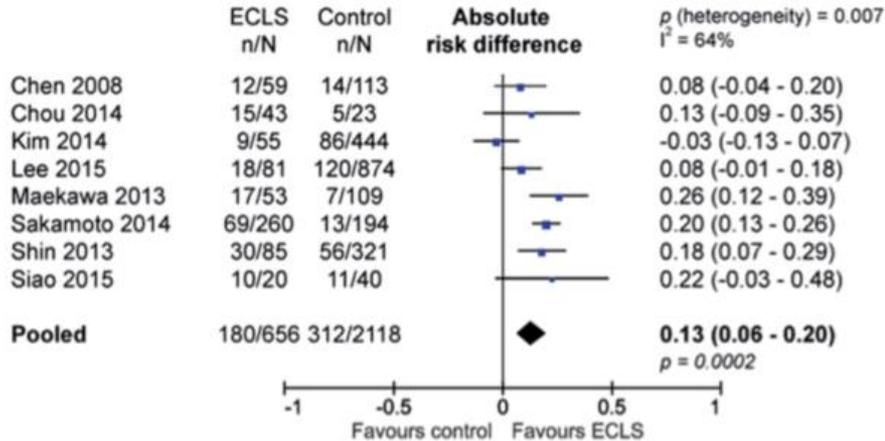
Cosa fare?

- Constatore il decesso
- Intra-aortic balloon pump
- ECMO
- Percutaneous left ventricular assist device (Impella, TandemHeart)

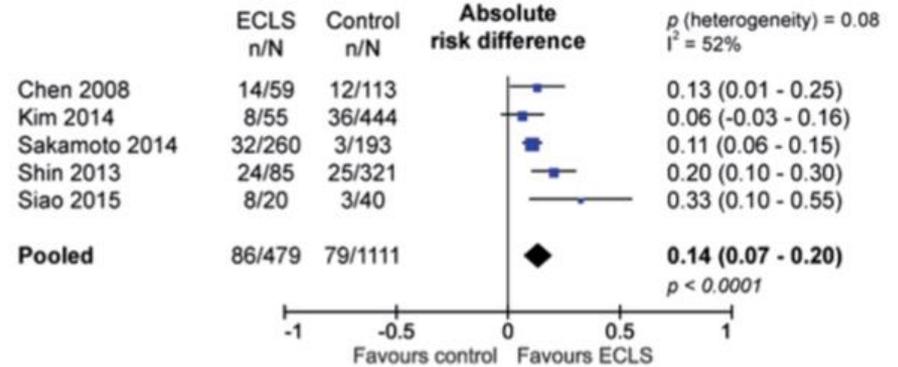


ECMO for ECLS evidence

Cardiac arrest - 30-day survival



Cardiac arrest - 30-day favourable neurological outcome

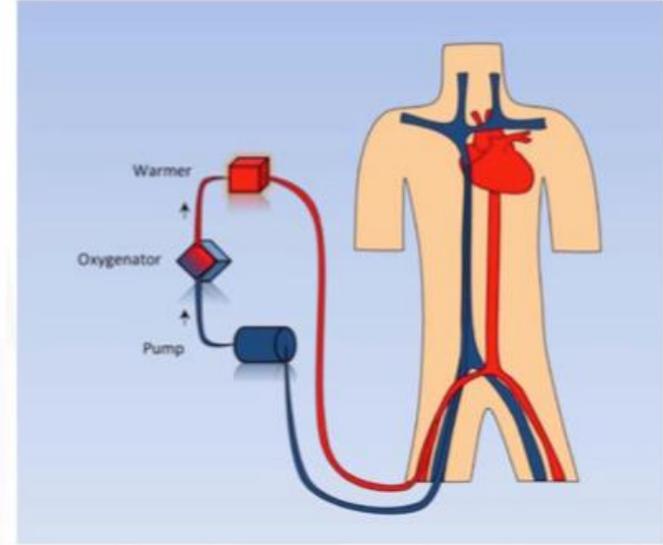
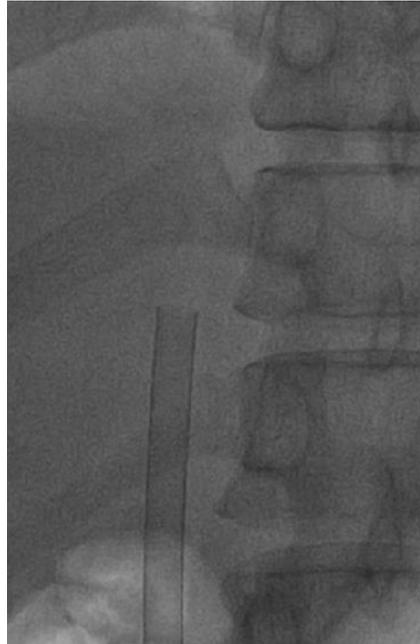


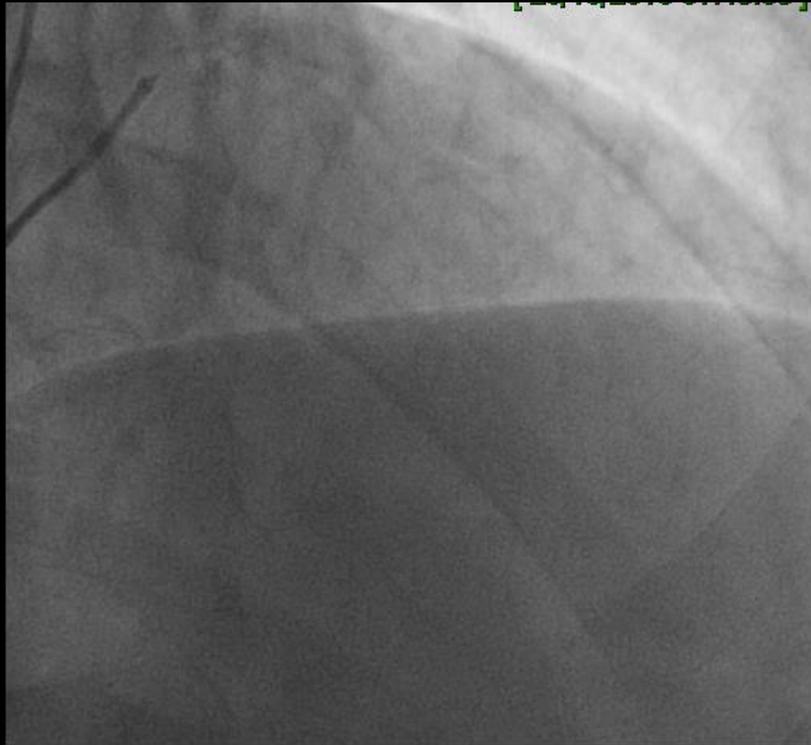
Management

Abbiamo rimosso il contropulsatore e sulla stessa linea posizionato la cannula arteriosa (18Fr) e quella venosa (25 Fr) percutaneamente.

Abbiamo connesso le cannule alla macchina dell'ECMO.

Total low-flow time: 45 minuti.





PCI di IVA media con impianto di un DES protetti da ECMO.

Management

Post-PCI ecocardiogramma LVEF 10%.

ECMO e ventilazione meccanica svezzati al 9° e 12°giorno.

Ciclo di riabilitazione cardiaca senza complicanze.

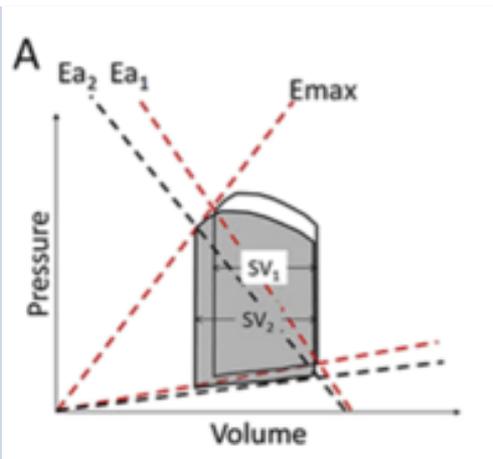
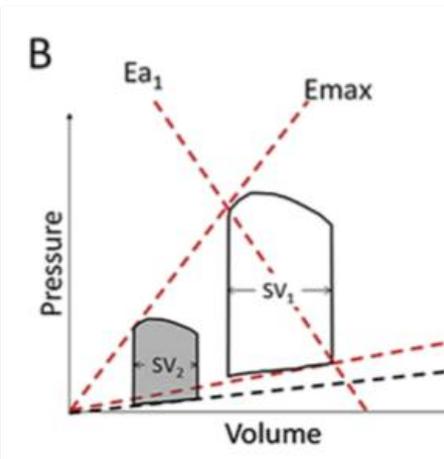
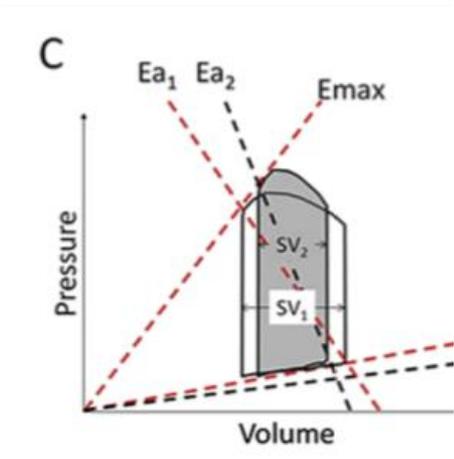
Dopo 3 mesi il paziente è asintomatico per angina ed in NYHA 2.

All'ecocardiogramma LVEF 30%.

A 5 mesi ha ripreso il lavoro.

Una PCI della CTO di MO è stata programmata fra 2 mesi.

Effects of Mechanical Support

	IABP	pVAD	ECMO
Cardiac			
Extra-Cardiac	Augmented CO 0,5-1 l/min	Augmented CO 2.5-5 l/min	Augmented CO 3.5-7 l/min

Conclusioni

- Eseguire un angioplastica con supporto meccanico del circolo è molto più semplice e sicuro in pazienti ad alto rischio.
- I mezzi di supporto meccanico del circolo rappresentano una terapia che potrebbe migliorare l'outcome nei pazienti che si presentano con shock o arresto cardiaco durante IMA.

Thanks!

2018 ESC/EACTS Guidelines on myocardial revascularization

Recommendations	Class ^a	Level ^b
Emergency coronary angiography is indicated in patients with acute heart failure or cardiogenic shock complicating ACS. ^{258,269}	I	B
Emergency PCI of the culprit lesion is indicated for patients with cardiogenic shock due to STEMI or NSTEMI-ACS, independent of time delay of symptom onset, if coronary anatomy is amenable to PCI. ²⁵⁸	I	B
Emergency CABG is recommended for patients with cardiogenic shock if the coronary anatomy is not amenable to PCI. ²⁵⁸	I	B

SHOCK trial

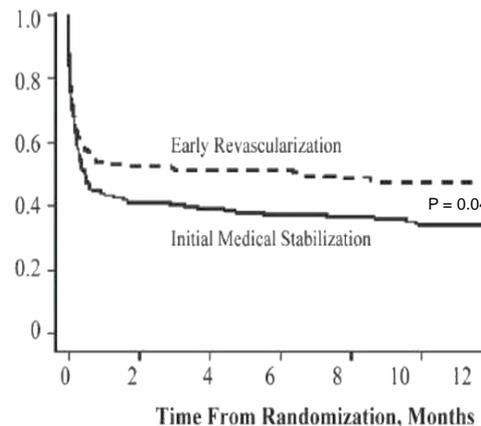


Figure 29. Kaplan-Meier survival of cardiogenic shock after early revascularization curve 1-year postrandomization. Survival estimates for early revascularization (n=152) and initial medical stabilization (n=149) groups. Log-rank test P = 0.04. Reprinted with permission

Hochman et al. JAMA 2001

Together with

Quale vaso trattare?

- IVA e CD nella stessa seduta
- CD
- MO

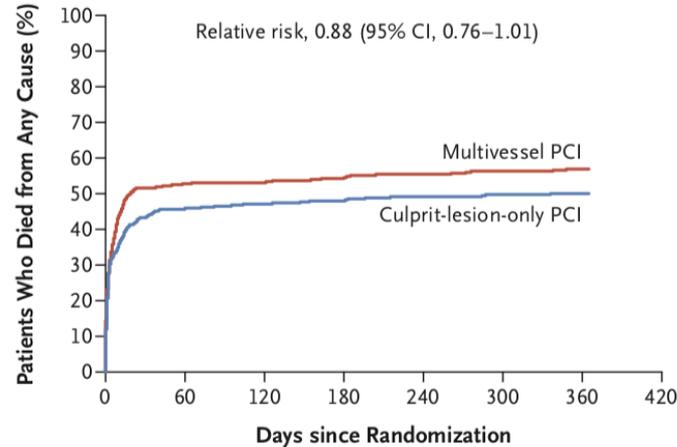


CULPRIT-SHOCK Trial

706 pts with AMI, shock and MVD.

Randomized to culprit-lesion-only PCI vs. immediate multivessel PCI.

Mortality for any causes at 1 year



No. at Risk

Multivessel PCI	341	161	160	156	152	149	131
Culprit-lesion-only PCI	344	186	181	178	174	172	147

Together with