Disclosure belangen spreker

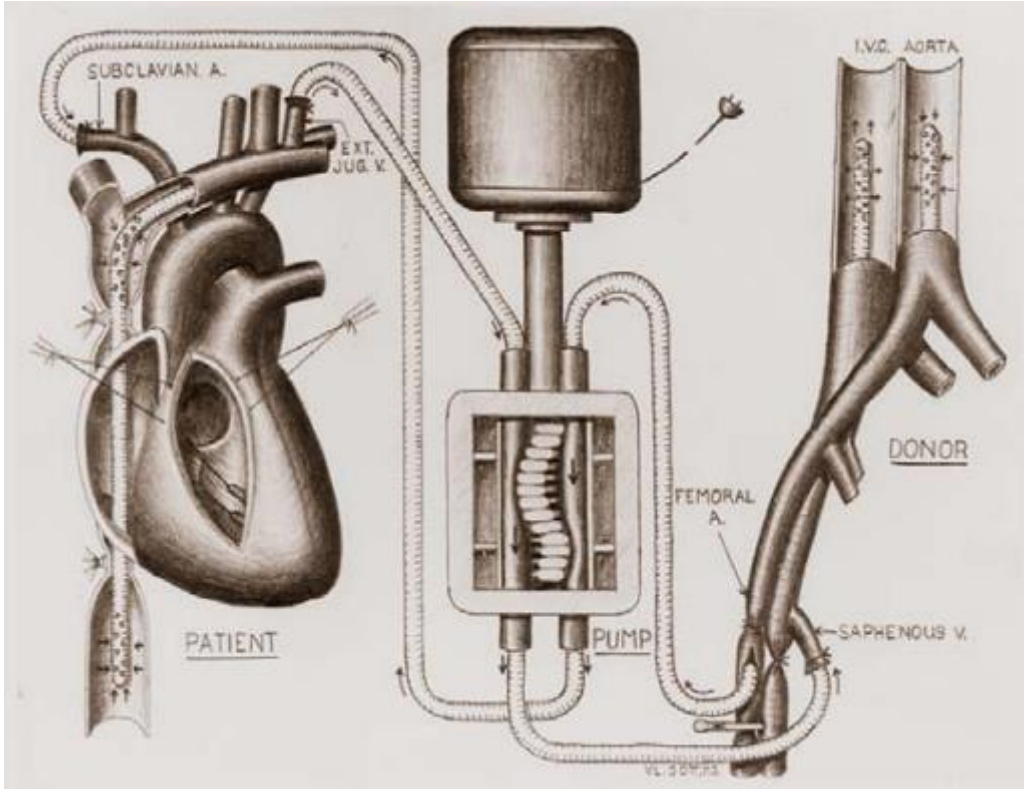
(potentiële) belangenverstrengeling	Geen / Zie hieronder
Voor bijeenkomst mogelijk relevante relaties met bedrijven	Bedrijfsnamen
• Sponsoring of onderzoeksgeld • Honorarium of andere (financiële) vergoeding • Aandeelhouder • Andere relatie, namelijk …	• GEEN • GEEN • GEEN • GEEN

Amsterdam UMC
Universitair Medische Centra

Mechanische Ondersteuning voor PCI

Renard Haumann EKP

Klinisch Perfusionist

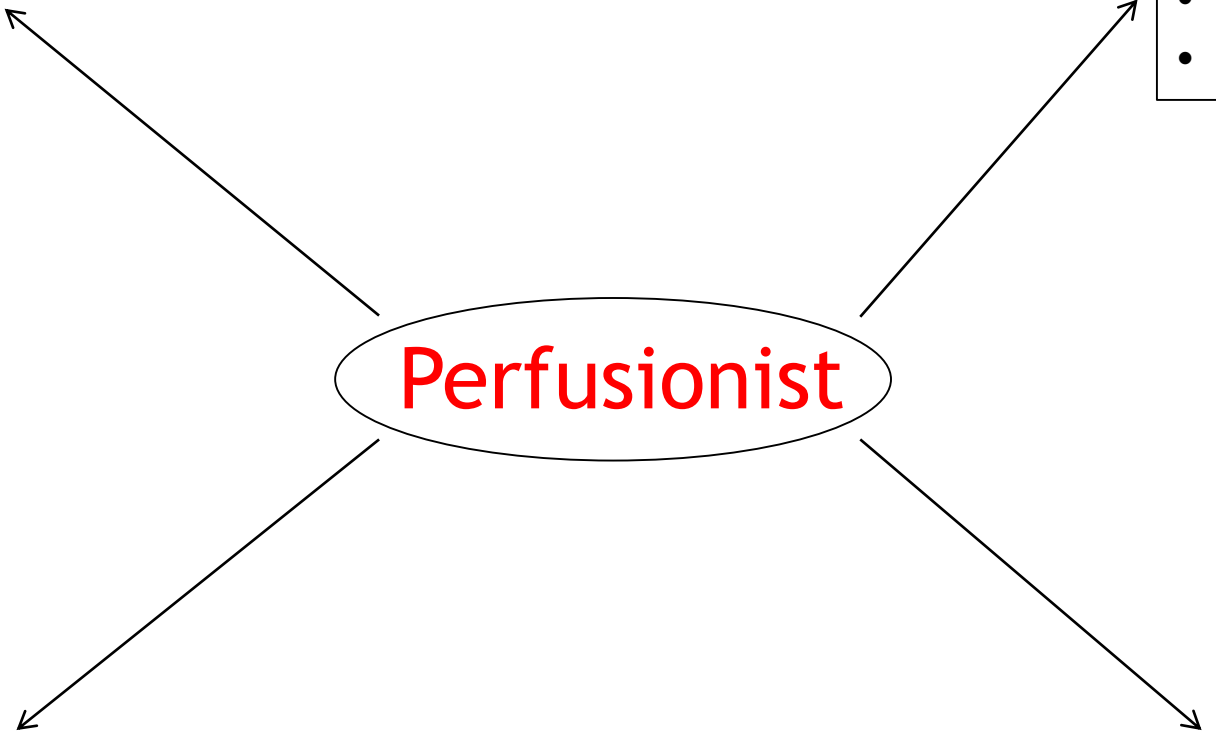


Cardio chirurgie

- CPB
- OPCAB
- IABP
- Cell saver
- ACT
- ECMO
- ROTEM

Overige chirurgie

- HIPEC (Oncologie)
- TAAA (vaat chirurgie)
- PTA (long chirurgie)



Intensive care

- IABP
- ECMO
- Scholing

Cath kamer

- IABP
- ECMO
- Impella

Zuid Afrika

Doel

- Hoog Risico Patiënten Identificeren
- Wat is nodig?
- Wat is mogelijk?
- Voordelen / Nadelen

Hoe zit het in Nederland??

- 1.600.000 patiënten HART en Vaatziekten
- 800.000 Coronaire Hartziekten
- Voornaamste Doodsoorzaak
- 1% PCI!!!

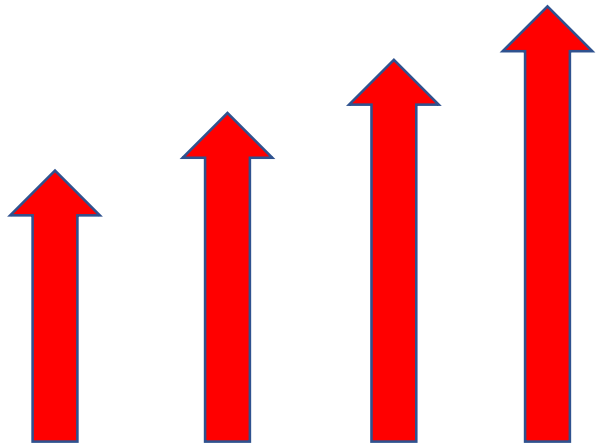
Amsterdam UMC (locatie VUmc)

- **2017**
  - 15 x HR-PCI
  - VA ECMO

- **2018** - 1800 interventies
  - 400 Spoed – 1400 Electief
  - 10 x HR-PCI
  - VA ECMO
  - IMPELLA…

Waarom??

- Complexiteit



Definitie Hoog Risico Patiënt

- Complexe anatomische laesies
- Cardiogene Shock
- EF ≤30% *(VUmc ≤35%)*
- Ouderdom (≥ 70j)
- Instabiele Hemodynamica
- Uitgebreide risicofactoren (CVA, DM, Renale Insufficiëntie, Chronische Pulmonale Ziekte)

Kar,S *Percutaneous Mechanical Circulatory Support devices for High-Risk Percutaneous Coronary Intervention*, Springer, 2018

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J Relig Health. 2018 Sep 14. doi: 10.1007/s10943-018-0698-8. [Epub ahead of print]

The Effect of Religious Intervention Using Prayer for Quality of Life and Psychological Status of Patients with Permanent Pacemaker.

Naimi E[1], Eilami O[2], Babuei A[3], Rezaei K[4], Moslemirad M[5].

Author information

Abstract

The development of heart disease, followed by the pacemaker implantation, has reduced the quality and psychological problems for patients. Thus, the present study was conducted to determine the effect of prayer on the quality of life and the psychological status of patients with permanent pacemaker. This is a quasi-experimental study in which 75 patients were assigned to experimental and control groups. Religious intervention was conducted for the experimental group, including the Tavasol prayer and four recommended (mustahab) remembrances in 7 sessions. Before and after the intervention, the patients were provided with the quality of life questionnaire and psychological status. Then, the questionnaires were analyzed using descriptive and analytical tests. Before intervention, there was no difference between quality of life status and psychological status of patients, but after intervention, their quality of life increased and their psychological status improved significantly. The implementation of religious intervention based on prayer positively affects the quality of life and psychological status of patients; thus, implementing this intervention is necessary for patients.

KEYWORDS: Cardiac patients; Prayer; Religious intervention; Remembrance

PMID: 30218372 DOI: 10.1007/s10943-018-0698-8

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Definitie Hoog Risico Patiënt

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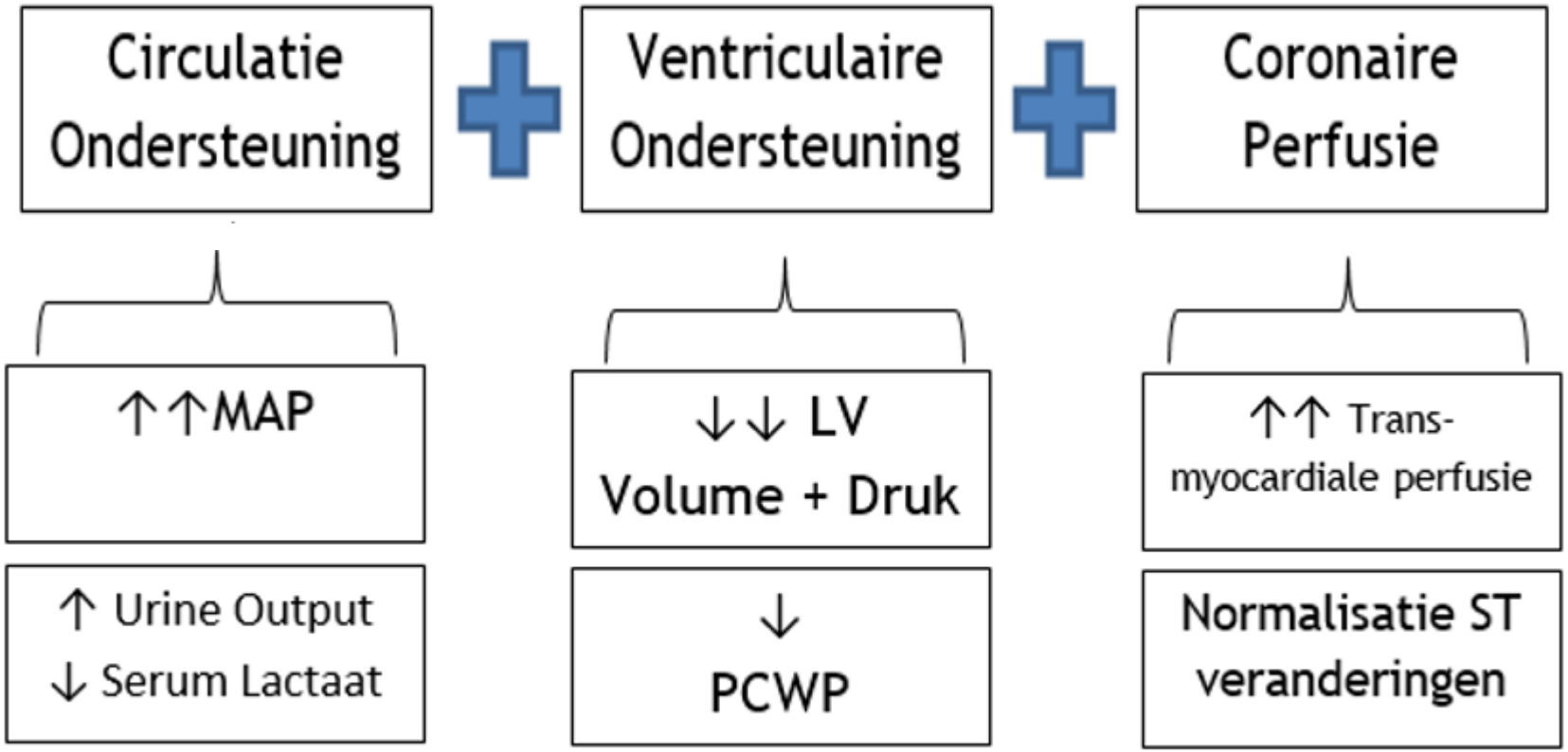


Mechanische Ondersteuning!!!!

Wat zijn de mogelijkheden?

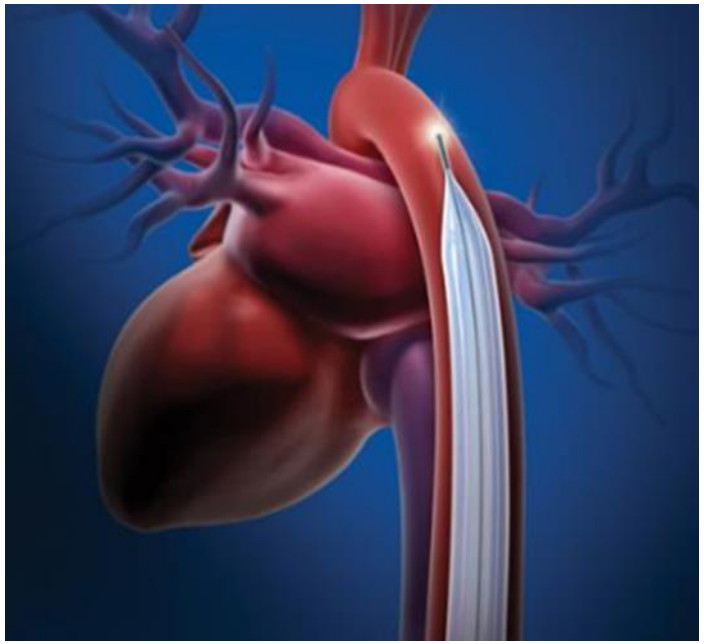
- IABP
- IMPELLA
- TANDEM Heart
- ECMO

Pulsatiele Pompen

Roller Pump

IABP

- Aorta Descendens
- Diastolische Augmentatie
- Afterload Reductie
- Verhoogde Coronaire Perfusie
- Max 8 Fr



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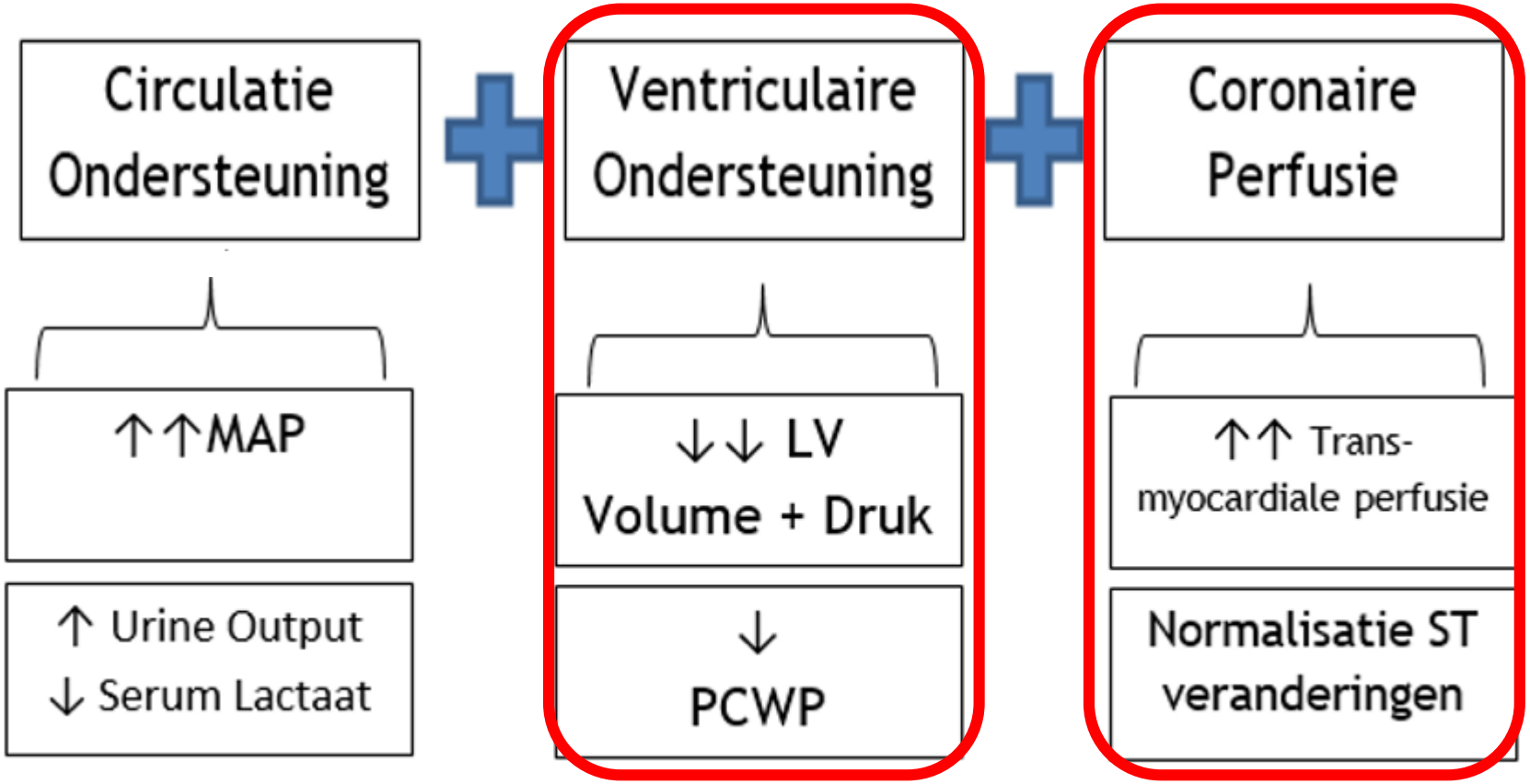
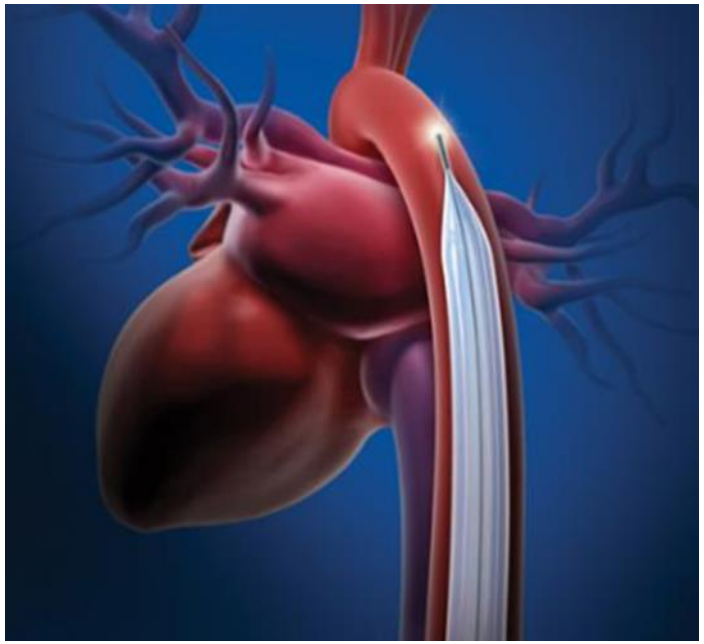


IABP Realiteit

- Marginale output verhoging
- Patiënt eigen cardiac output afhankelijk
- Timing
- Sinus Ritme



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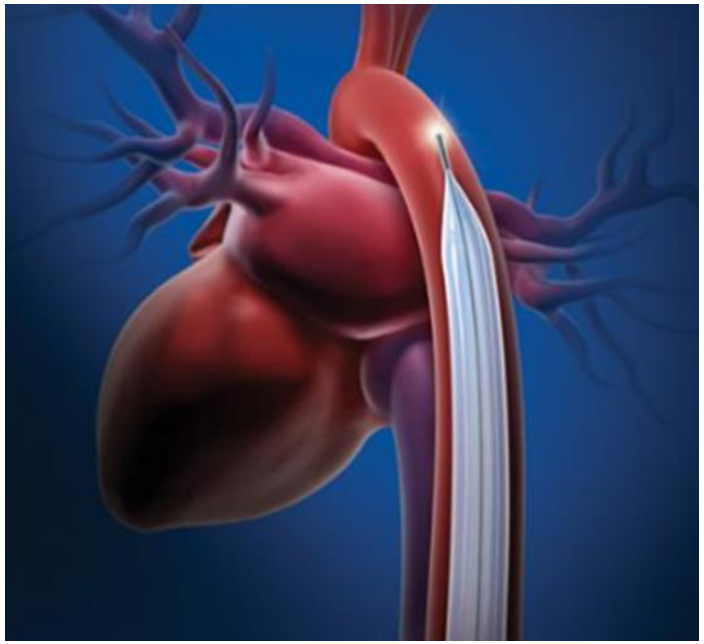
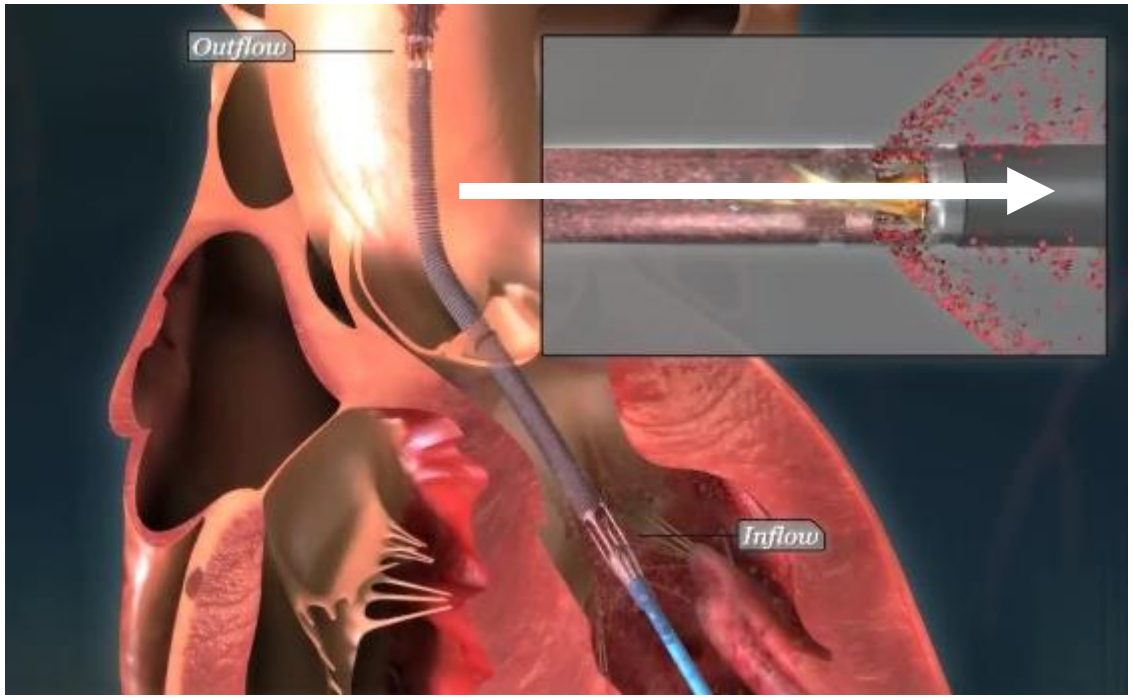
IABP Complicaties

- Ruptuur
- Lekkage
- Verplaatsing
- Stolsels
- Embolieën
- Insertieplaats Bloeding
- Trombocytopenie



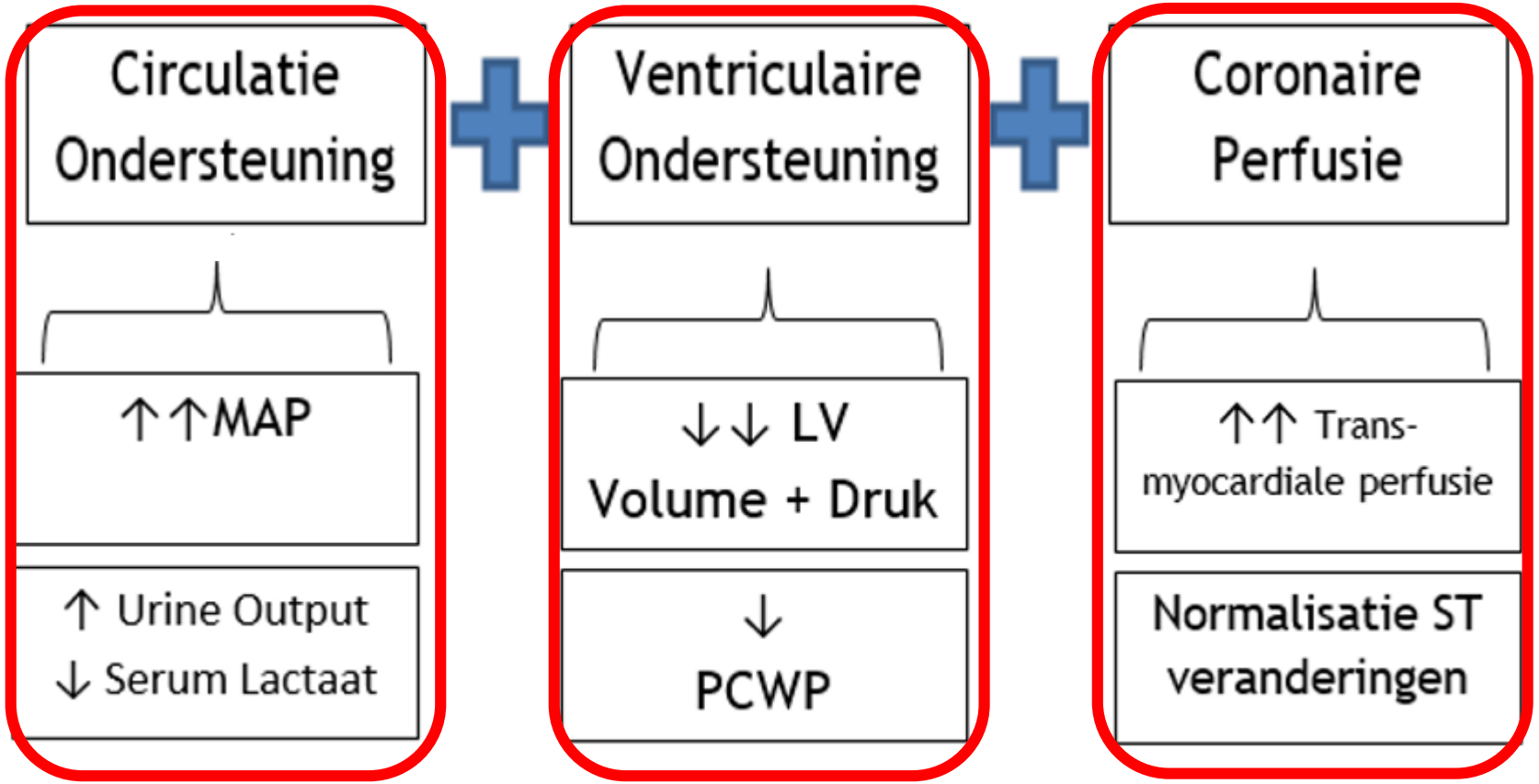
Axiale Pompen



IMPELLA

- Centrifugale Axiale Pomp
- 12 – 14 FR
- LV inflow
- AO outflow
- 2,5 liter/min
- 5 liter/min
- 7 dagen

3 doelen tijdens behandeling



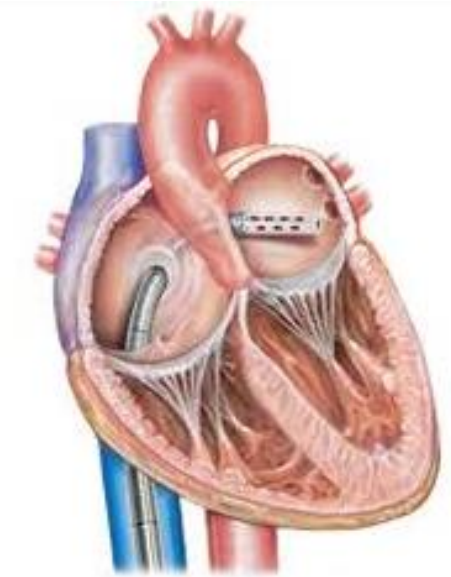
Potentiële Nadelen IMPELLA

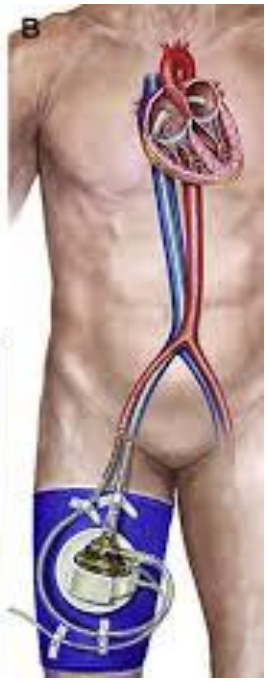
- Vasculaire Complicaties
- Positionering
- LV vulling
- Infectie
- Hemolyse
- Embolieën

Centrifugale Pompen

Tandem

- LIFE
- LUNG
- PROTECT DUO
- HEART
  - LA inflow
  - FA outflow
  - 4-5 l/min
  - 6 uur





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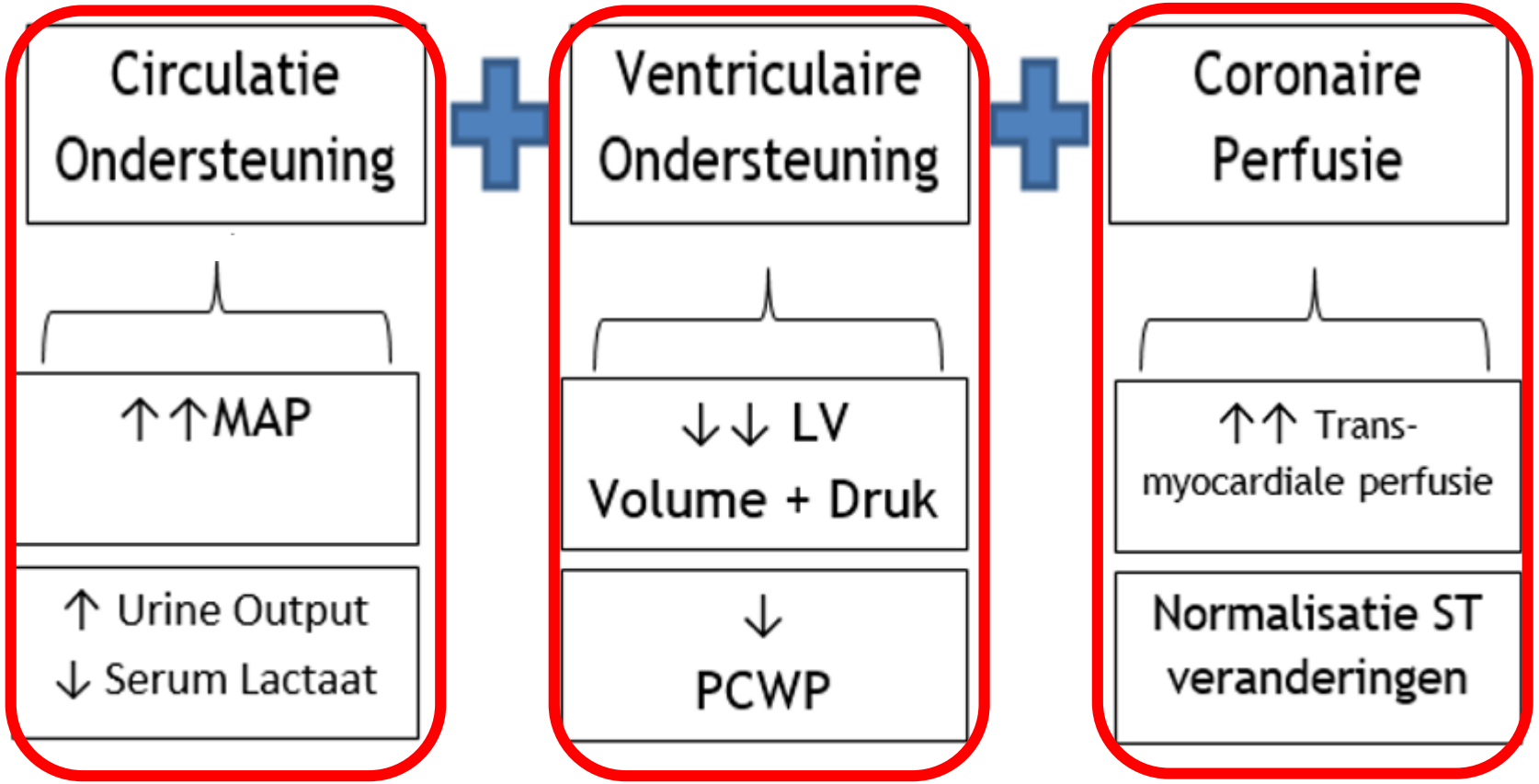
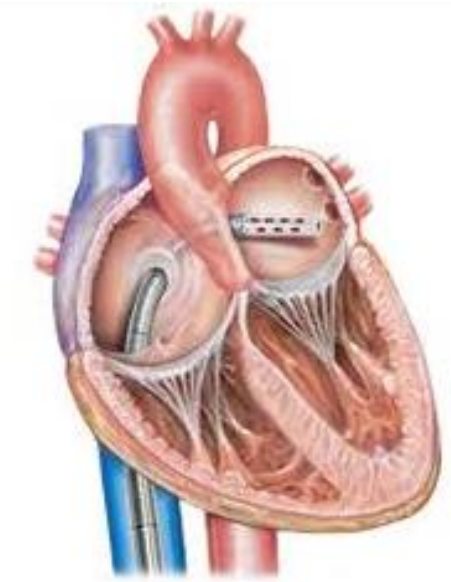
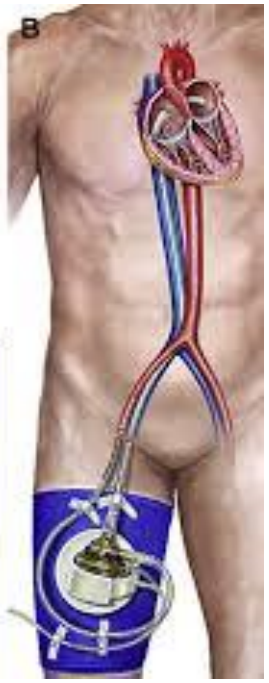


TANDEM Potentiele Nadelen

- Trans-septale Canulatie
- Vasculaire Complicaties
- 21fr canule *Vena Femoralis*
- 17fr canule *Art. Femoralis*
- Niet gebruiken RHF
- Zelfde als IABP (CVA, Embolieën, Infectie, Hemolyse)
- Ischemie onderbeen, hemolyse ↑↑, bloeding

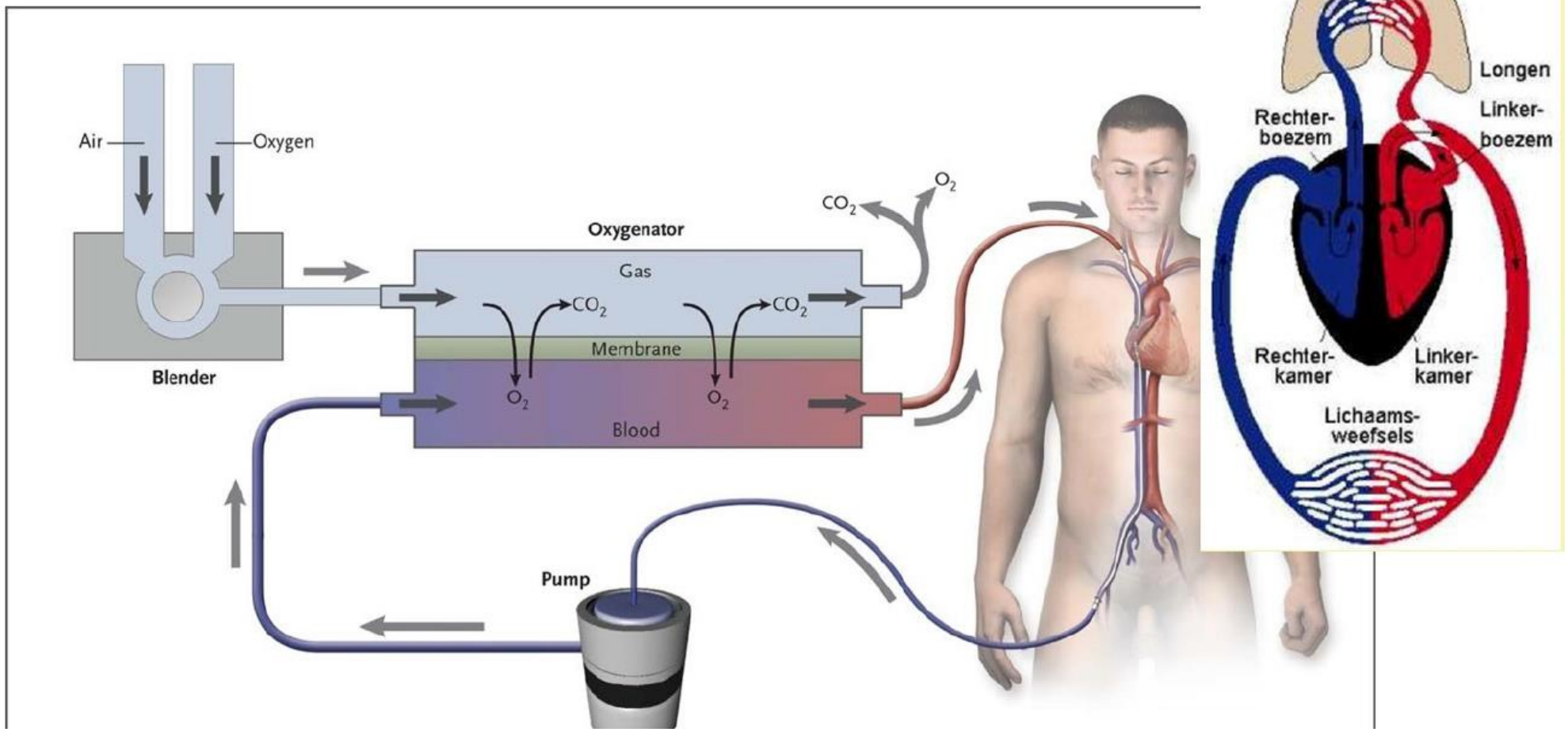


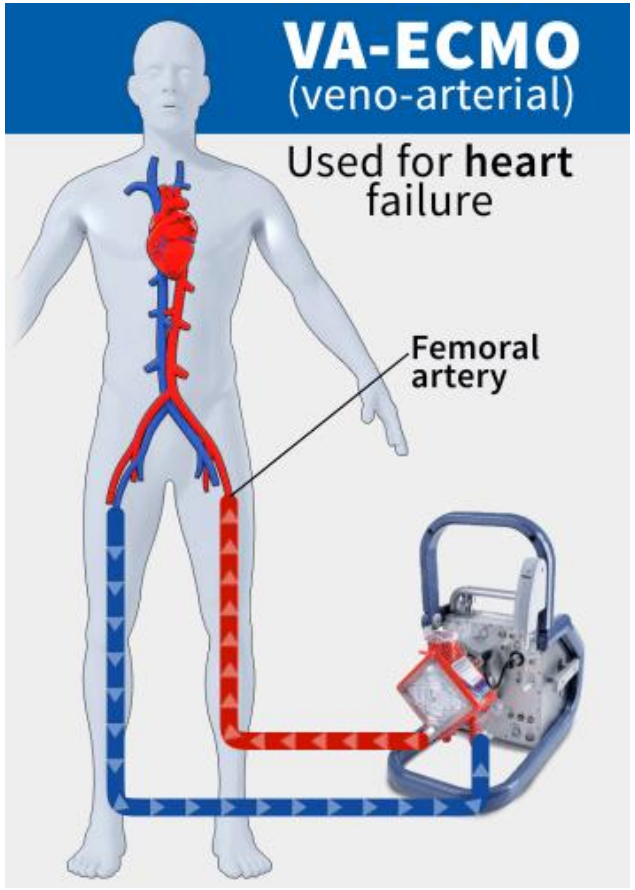


Centrifugale Pompen

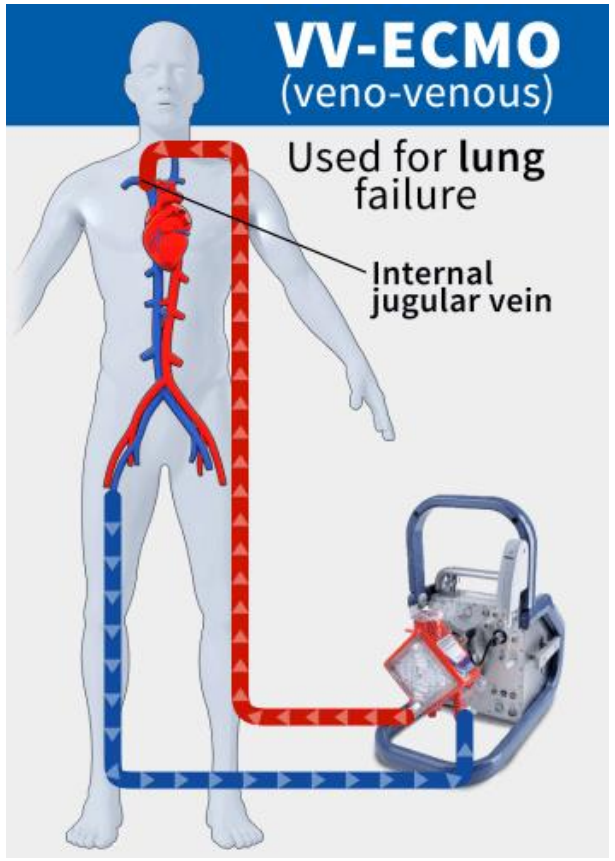
Extracorporeal Membrane Oxygenation

Circuit



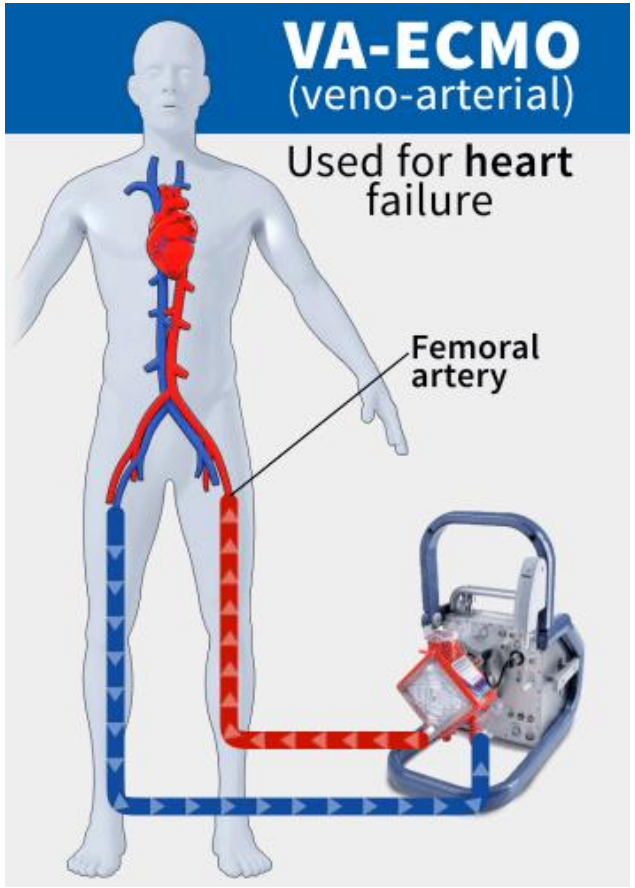

VA-ECMO
(veno-arterial)
Used for heart failure
Femoral artery

ECMO


VV-ECMO
(veno-venous)
Used for lung failure
Internal jugular vein

ECMO

- **E**xtra **C**orporale **M**embraan **O**xygenatie
- VA - Hart en Long ondersteuning
- Femorale Canulatie
- RA inflow
- FA outflow
- 5 l/min
- 6 uur



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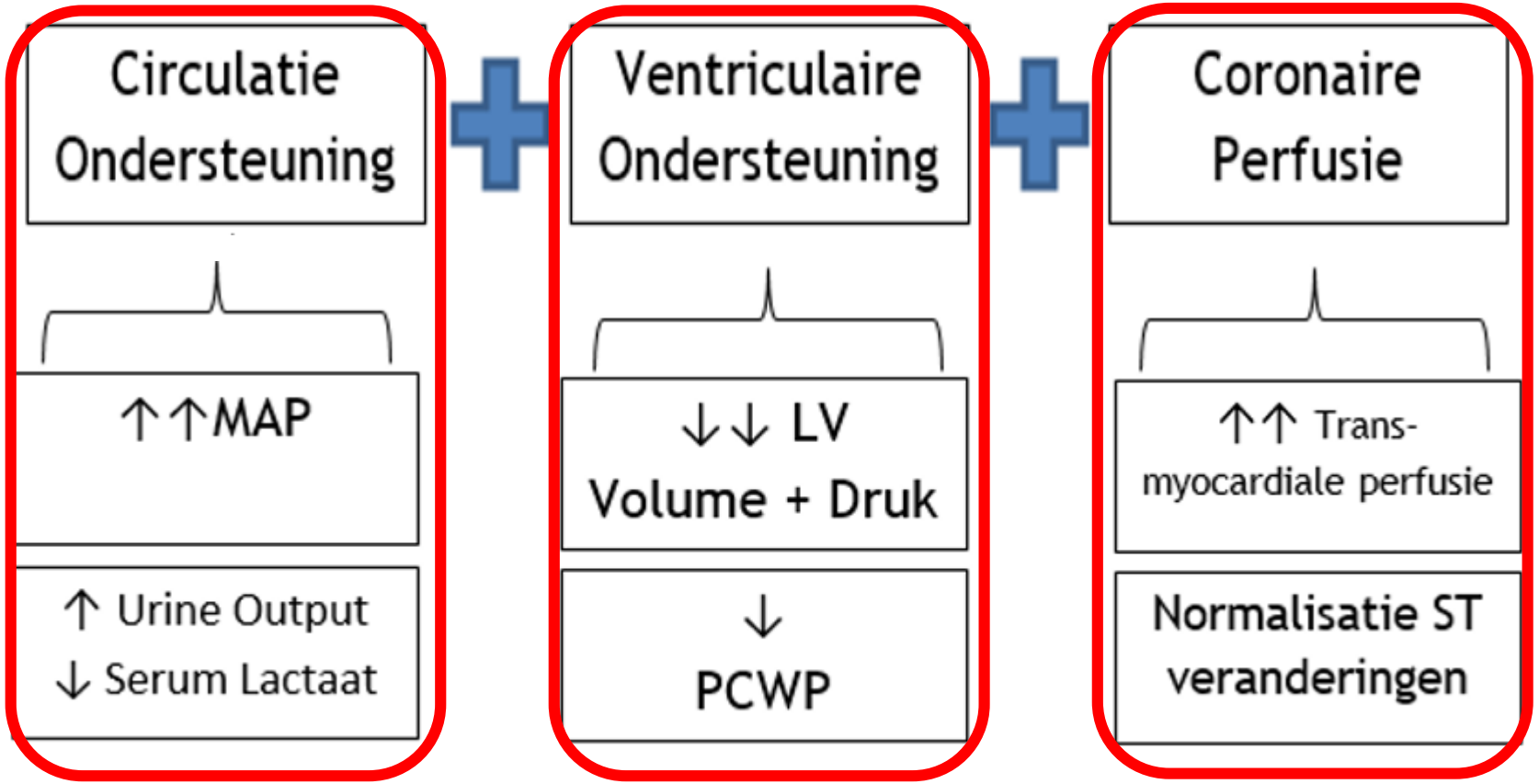
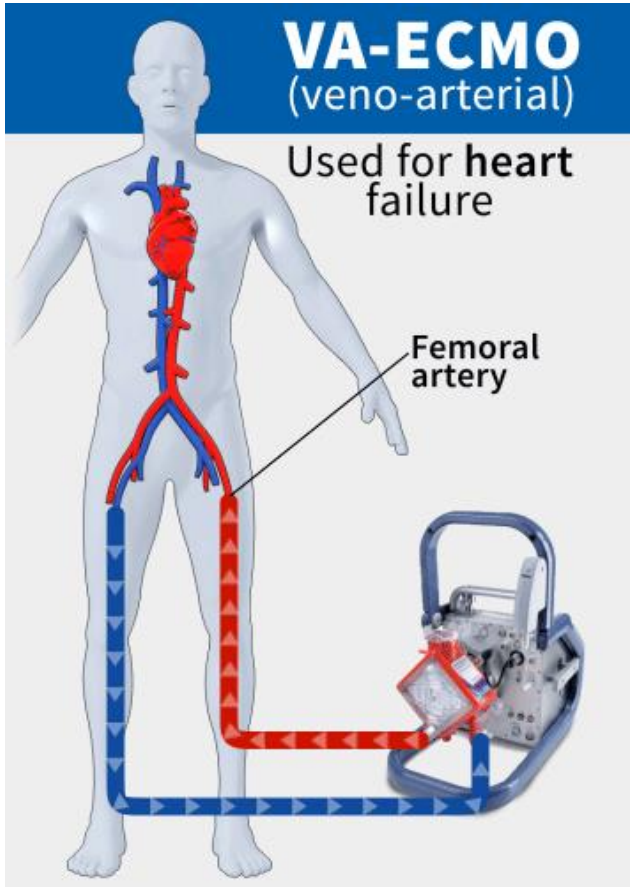


ECMO potentiële nadelen

- Vasculaire complicaties
- Multidisciplinair
- Grote canules (17 – 29 Fr)
- Hemolyse
- Trombocytopenie
- Harlekijn syndroom
- Niet snel in te brengen
- Onderbeen Ischemie
- LV afterload verhoging?????



	IABP	Impella	Tandem	ECMO
1.Indicatie	CS, HR-PCI	CS, HR-PCI, L/R Hartfalen	CS, HR-PCI, L/R Hartfalen, Longfalen	CS, HR-PCI, Hart/Longfalen
2.Cardiac Output (liter/minuut)	0,5	2,5 - 5	4	5
3. Mechanisme	Diastolische Augmentatie	Axiale pomp	Centrifugaal / Extracorporale Membraan	Centrifugaal / Extracorporale Membraan
4. Snelle Implantatie	JA	JA	NEE	NEE
5. Gebruiksduur	uren - dagen	7 dagen	6 uren max	uren (6 max) / weken
6.Tekortkomingen	Output afhankelijk geen dysritmie	Grote Canules (12-14 Fr) of Links of Rechts	Transseptale toegang, Lange inbreng tijd, Grote Canules 17-21 Fr	Lange inbreng tijd, Afterload ↑↑, Grote Canules 17 - 29 Fr
7. Contra-indicaties	>milde AOI, Erge AOS	AOI, AO dissectie, AO Prothese, AOS, Sepsis, Thrombus LV/LA	Thrombus LA/RA, VSD, RVF	AOI
8. Complicaties				
Thrombocytopenie	JA	JA	JA	JA
Bloeding	JA	JA	JA	JA
Ledemaat Ischemie	JA	JA ↑	JA ↑↑	JA ↑↑
Vasculaire Complicatie	JA	JA	JA	JA

Voor de fijnproevers…

Study (type)	Patients (*n*)	Outcomes	Results
IABP			
BCIS-1 [12] (prospective, open label, multicenter, randomized; severe CAD with EF < 30%; high-risk PCI)	IABP (151); no IABP (150)	MACCE = death, MI, cerebrovascular event, repeat revascularization	IABP: no MACCE reduction
BCIS-1 long-term [13] (listed above)	Listed above	Listed above	IABP: 34% relative reduction all-cause mortality; hazard ratio 0.66, 95% confidence interval 0.44–0.98, $p = 0.039$ (51 month follow-up)
IABP-Shock II trial [14]- 12 month results (open label, multicenter, randomized; cardiogenic shock after MI)	IABP (301); no IABP (300)	All-cause mortality, cardiac mortality, reinfarction, stroke, repeat PCI, additional CABG, repeat revascularization	IABP: no reduction in 12-month all-cause mortality
Impella			
PROTECT II [15] (prospective, multicenter, randomized; 3-vessel or unprotected left-main CAD with severely depressed EF during non-emergent PCI; high-risk PCI)	Impella 2.5 (226); IABP (226)	Intra- and post-procedural major adverse events at 30 and 90 days; all-cause death, MI, stroke, TIA, repeat CABG or PCI, acute renal failure, hypotension requiring treatment	Impella 2.5 = superior hemodynamic support ($p = 0.001$); no 30-day major adverse event difference; 90 days = improved outcomes trend
PROTECT II sub-study [16] (3-vessel CAD only, non-emergent PCI; high-risk PCI)	Impella 2.5 (167); IABP (158)	Listed above	Impella: lower 90-day major adverse events. Impella 39.5% vs. IABP 51.0%, $p = 0.039$
ISAR-Shock trial [17] (prospective, randomized, cardiogenic shock from MI)	Impella 2.5 (12); IABP (13); 1 patient expired before implant	Change of baseline cardiac index; secondary endpoints = 30-day mortality, lactic acidosis, hemolysis	Impella increased cardiac index post-implant (30 min) 0.49 ± 0.46 vs. IABP = 0.11 ± 0.31 l/min/m^2, $p = 0.02$; no mortality difference
Impress trial [18•] (randomized, prospective, open-label, multicenter; severe cardiogenic shock from ACS)	Impella CP (24); IABP (24)	30-day all-cause mortality	Impella vs. IABP: no difference in 30-day mortality (46 vs. 50%, $p = 0.92$) or 6-month mortality (both 50%, $p = 0.923$)
Tandem Heart			
Thiele et al. [19] (single center, randomized; cardiogenic shock from ACS)	Tandem Heart (21); IABP (20)	Cardiac power index; 30-day mortality and device related complications	Tandem Heart: cardiac power index and hemodynamic variables improved ($p < 0.001$); increased limb ischemia ($p = 0.009$) and severe bleeding ($p = 0.002$); similar 30-day mortality (Tandem Heart 43% vs. IABP 45%, $p = 0.86$)
ECMO			
Tomasello et al. [11] (prospective single center; high-risk PCI)	ECMO (12)	MACCE-death, acute MI, stroke, repeat revascularization	ECMO high-risk PCI = viable alternative in very high-risk CABG patients

IABP intra-aortic balloon pump, *MACCE* major adverse cerebral and cardiovascular events, *MI* myocardial infarction, *CAD* coronary artery disease, *EF* ejection fraction, *ECMO* extracorporeal membrane oxygenation, *PCI* percutaneous coronary intervention, *CAD* coronary artery disease, *TIA* transient ischemic attack, *CABG* coronary artery bypass grafting, *ACS* acute coronary syndrome

Samenvatting

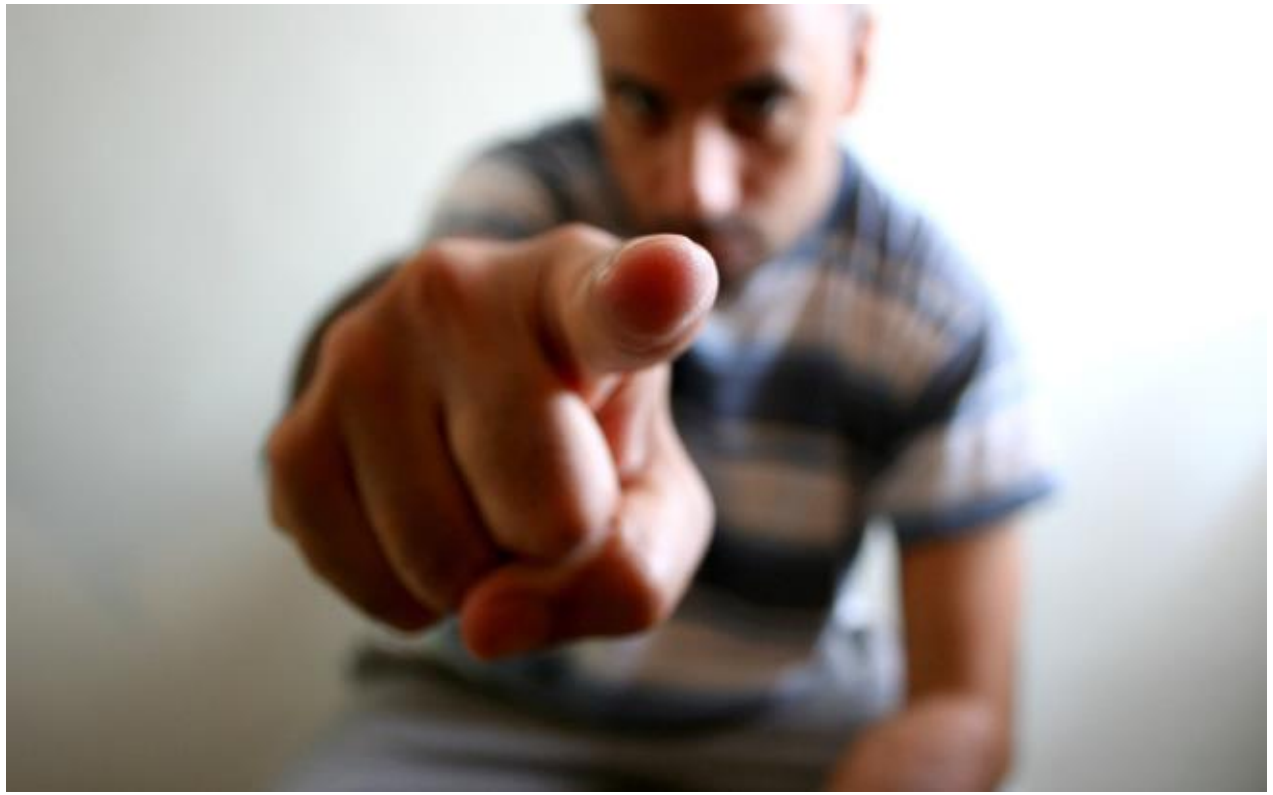
✓Definitie Hoog Risico Patiënt

✓3 Essentiële Factoren

✓4 Mogelijke Apparaten

HART/D WERKEN

En jullie ?



Dank u wel!

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