



Università degli Studi di Torino
DIVISIONE DI CARDIOCHIRURGIA
Direttore Prof. Mauro Rinaldi



ACUTE AND REFRACTORY HEART FAILURE:

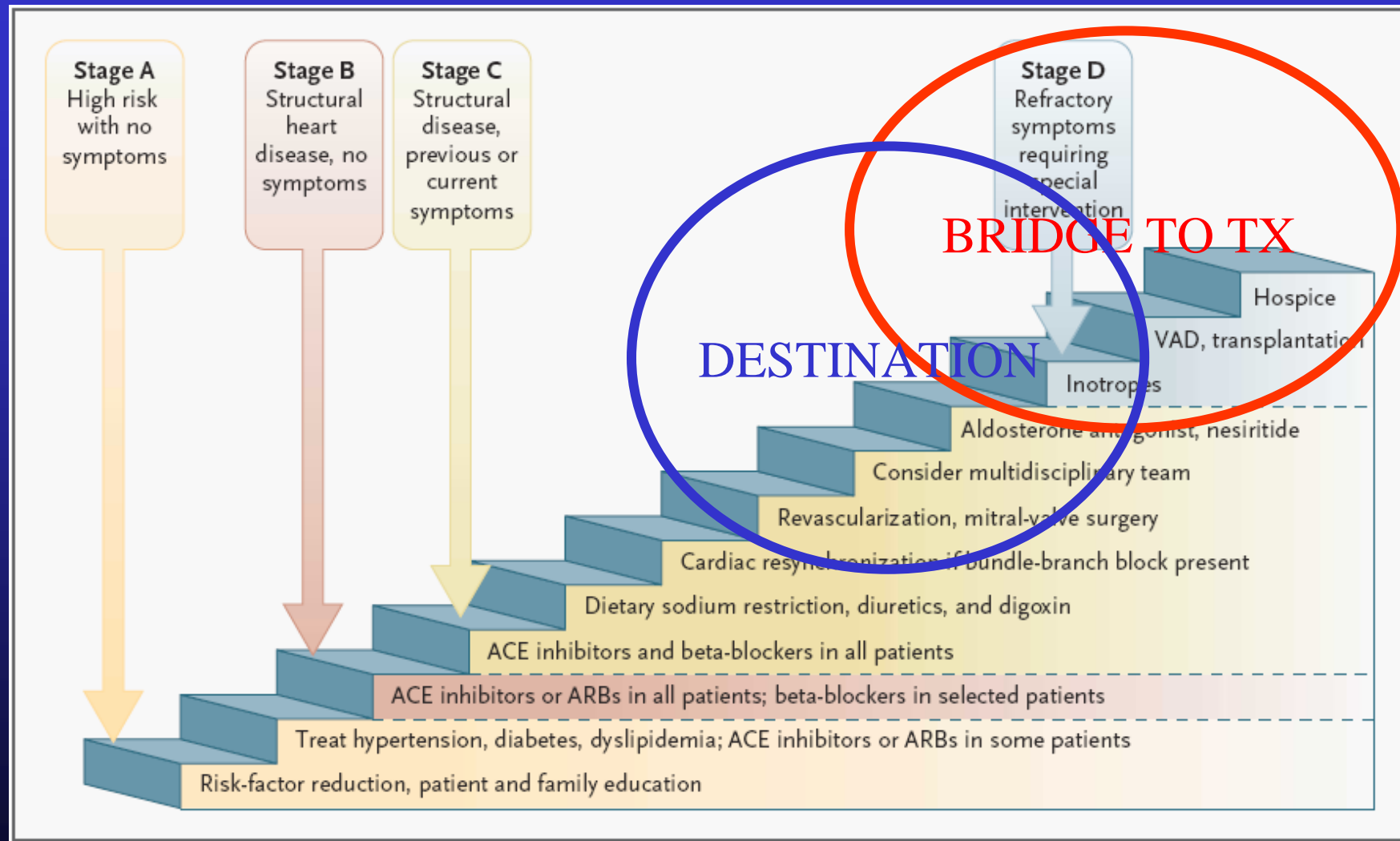
How to treat and what role for non Pharmacologic Therapies?

P. Centofanti

5th JMC – Joint Meeting with Mayo Clinic

15th – 16th october 2009

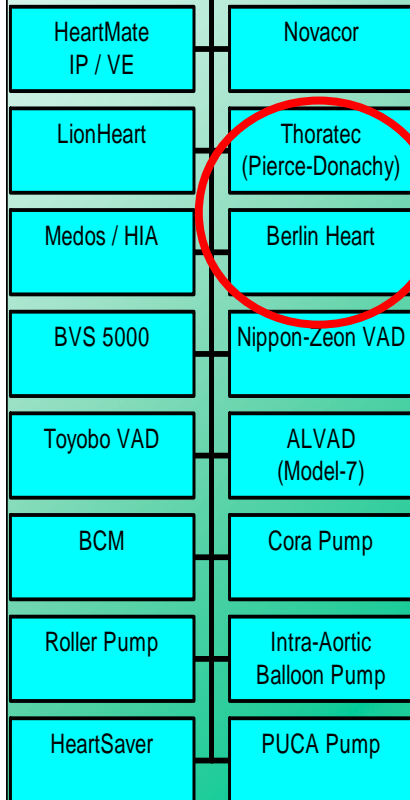
Heart Failure staging and treatment



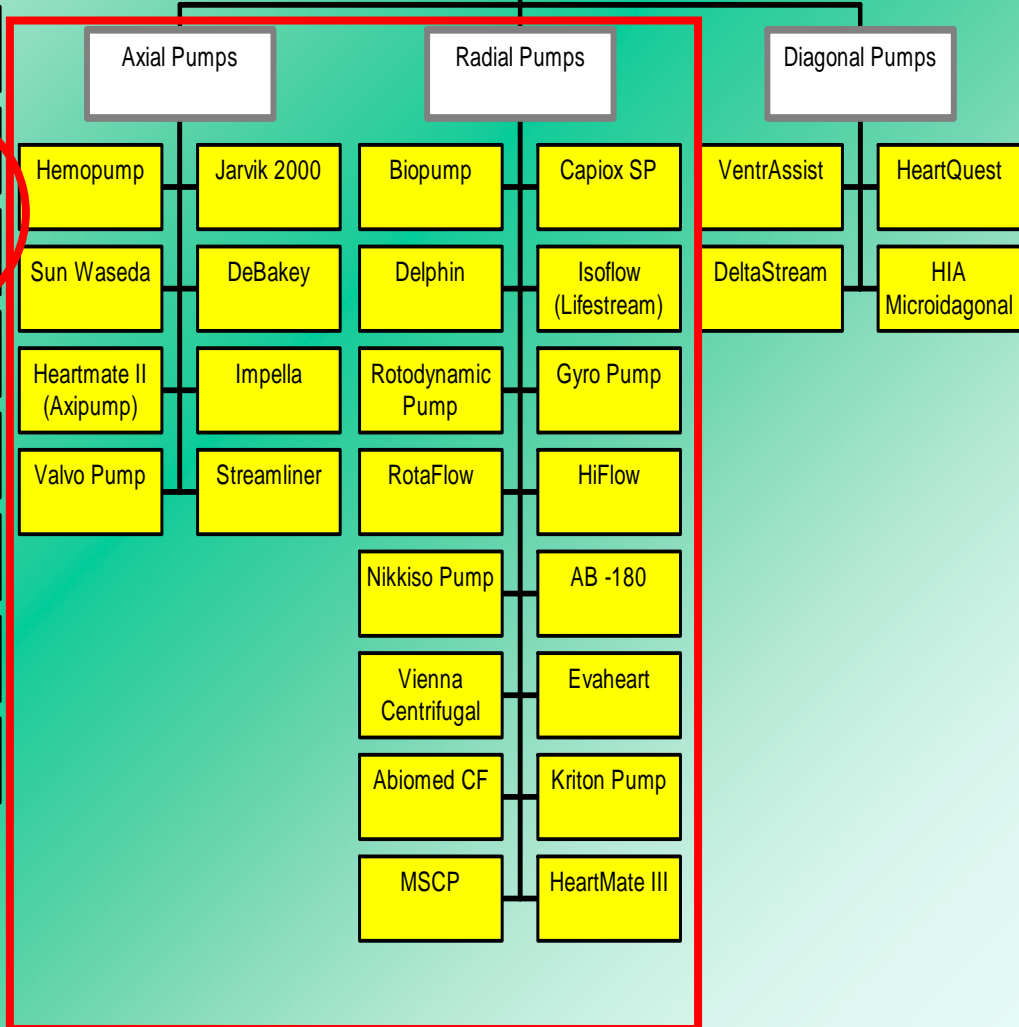
VAD

Blood Pumps

Displacement Blood Pumps *Pulsatile VAD*

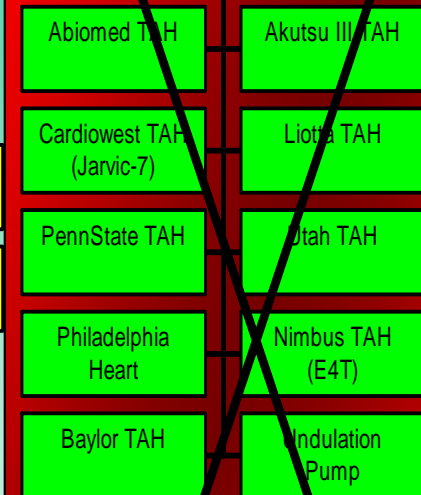


Rotary Blood Pumps *Continuous Flow Devices*



TAH

Total Artificial Heart *Heart Replacement*



VAD TARGET

Bridge to RECOVERY (AHF due to myocarditis or AMI)

Bridge to DECISION (“Unknown” patients)

Bridge to SURGERY (mechanical AMI complications)

Bridge to TX (End-stage ICM or DCM)

DESTINATION (HTx contraindication)

VAD INDICATION

Bridge to decision

Long-term VAD



Short-term VAD



Regional Network

Step 1: Cardiology – Cardiac surgery

Precardiotomy

Acute Cardiogenic Shock

Postcardiotomy

Quadro clinico definito da i seguenti
criteri clinici (SBG):

Inotropi

Persiste SBG nonostante

l'utilizzo di 2 inotropi

alto dosaggio e IABP

• $IC < 2.0 \text{ L/min/m}^2$

• $Wedge \text{ IABP} < 20 \text{ mmHg}$

• $PA \text{ sistolica} < 80 \text{ mmHg}$

• Più breve tempo

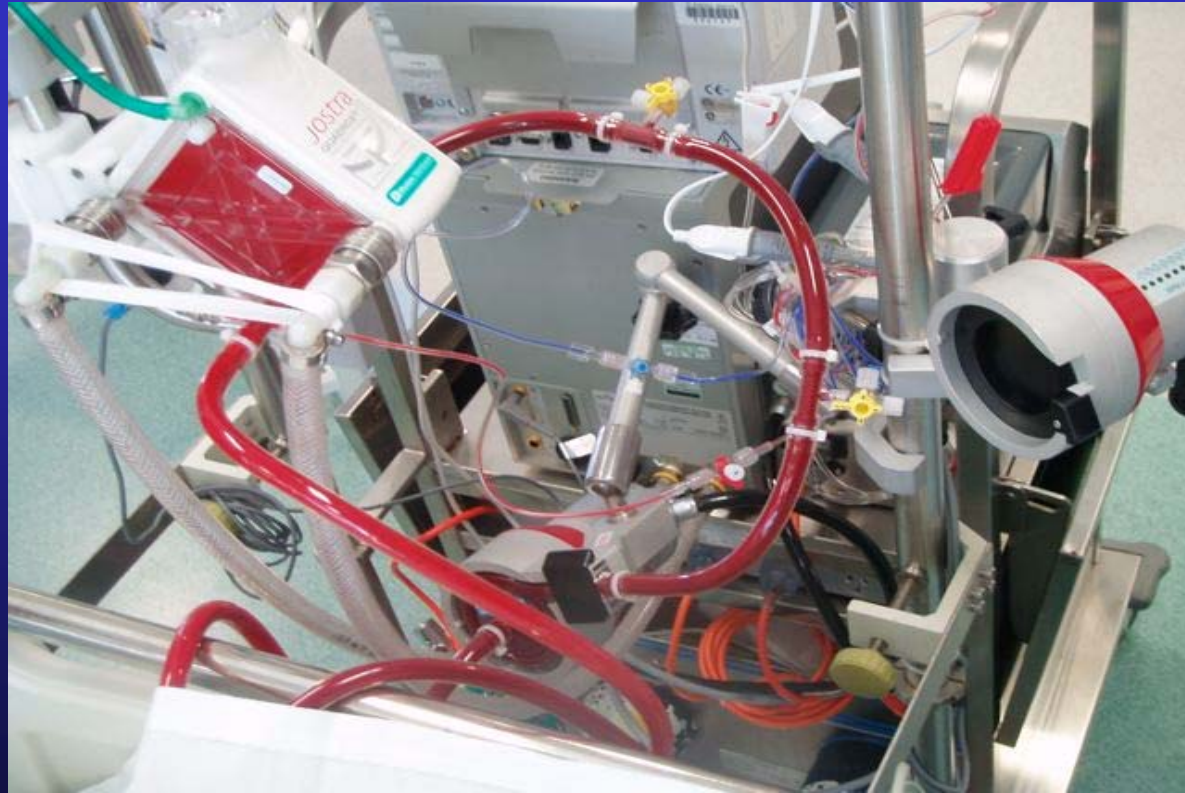
possibile (<12 ore)

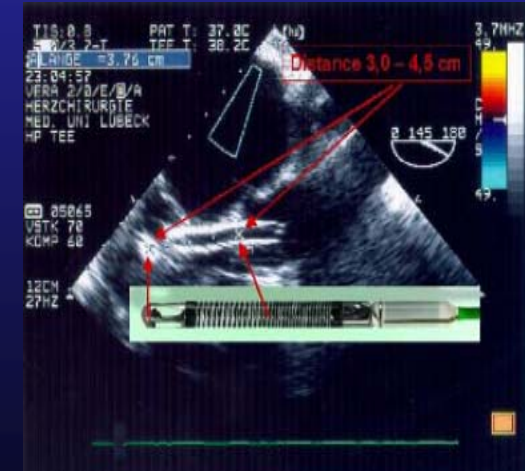
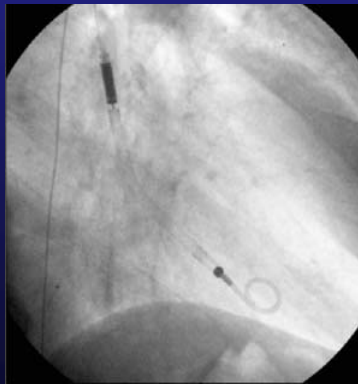
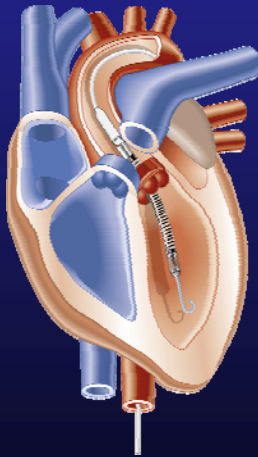
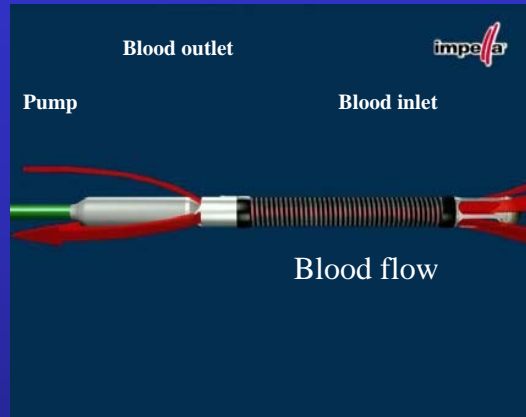
Short-term VAD

Comunicazione con il centro di riferimento
ed attivazione del Network

ECMO

(extra-corporeal membrane oxygenator)





VAD paracorporei



PIERCE- DONACHY- Thoratec

EXCOR-Berlin Heart



VAD INDICATION

Bridge to transplant



REMATCH trial

N Engl J Med. 2001 Nov 15;345(20):1435-43.

1998 – 2001: 129 pts non eligible for heart transplantation in NYHA IV:

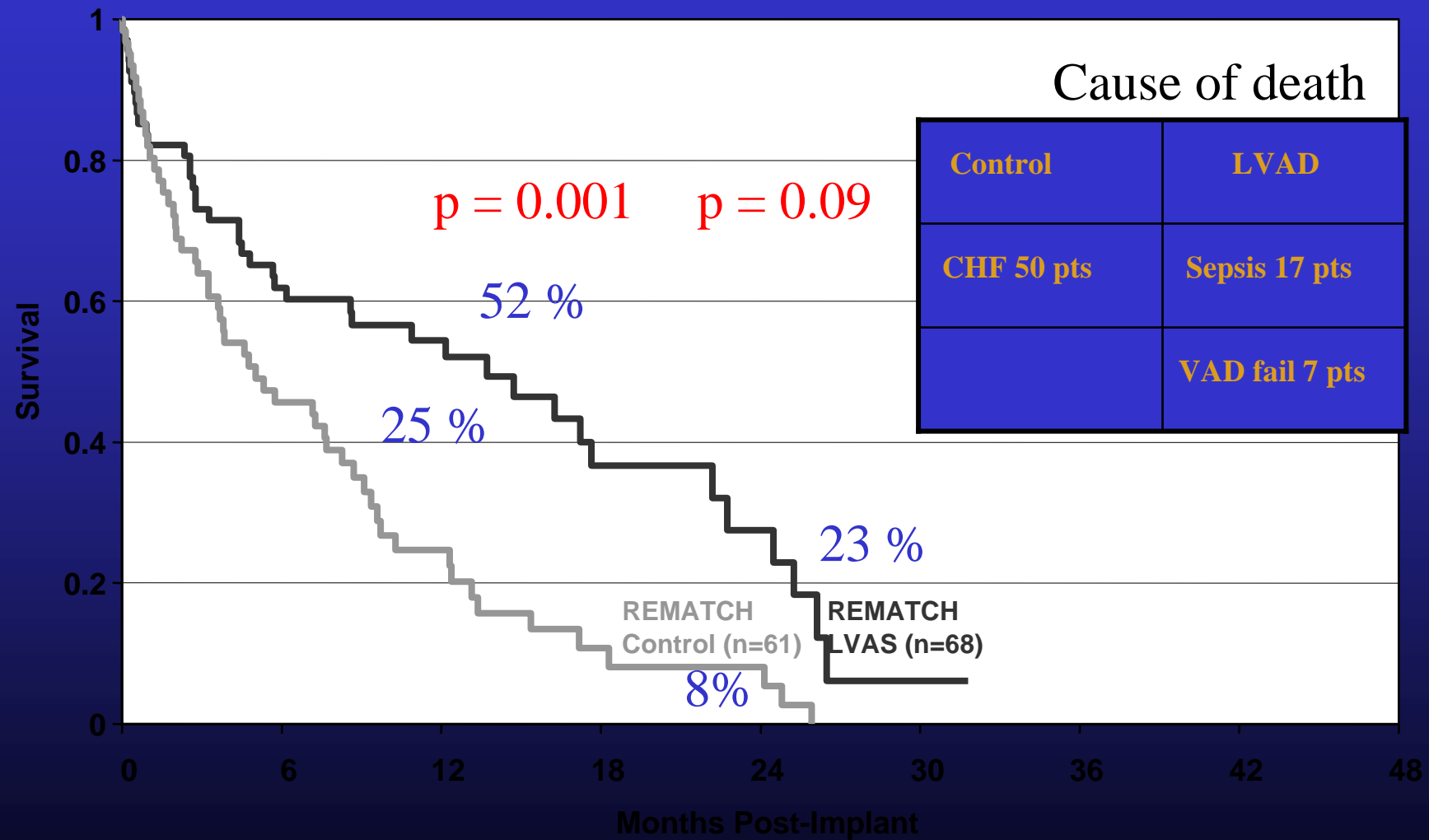
- 68 to LVAD with Heartmate I
- 61 to OMM

Results:

- ✓ Improved survival at 1 and 2 yrs with reduction of 48% of the risk of death in LVAD group

Quality of life significantly improved in LVAD group

REMATCH - survival



Too Early – Too Late

LVEF (%)	35	30	25	20	15	<10
LVEDD (mm)	65	70	75	80	85	>90
Cardiac Index (l/min/m ²)	2,4	2,2	2	1,8	1,6	1,4
CVP torr	10	12	14	16	18	>20
APACHE II	<10	<10	11-15	11-15	16-20	>20
Inotropes (days)	0	0	1	2-4	5-10	>10
Hepatic failure (bilirubin)	<1	<1.5	<2	<3	<5	>5
RVF (RVFAC)%	>40	>40	>35	>30	>25	<20
Ventilation (days)	0	0	<1	1-3	4-6	>7
MCS (days)	0	0	<1	1-3	4-6	>7
MOF (organs)	0	1	1	2	3	>3

INTERMACS: Patient Selection

Patient Profile/ Status: INTERMACS Levels

1. Critical cardiogenic shock ("crash and burn")
2. Progressive decline ("sliding fast")
3. Stable but inotrope dependent (stable but dependent)
4. Recurrent advanced HF ("frequent flyer")
5. Exertion intolerant
6. Exertion limited ("walking wounded")
7. Advanced NYHA III

