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XXX

**GIORNATE
CARDIOLOGICHE
TORINESI**

**TURIN,
October
25th-27th
2018**

SCIENTIFIC COMMITTEE

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PIETRO RISPOLI

SAVE THE DATE



LVAD

Cardiac surgeon

Dott. Matteo Attisani

Cardiac Surgery

Department of Cardiovascular and Thoracic surgery

Heart and Lung Transplantation Programme

University of Turin - Italy

PROFILE-LEVEL	Official Shorthand	General time frame for support	Treatment
INTERMACS LEVEL 1	“Crash and burn”	Hours	•Short-term VAD
INTERMACS LEVEL 2	“Sliding fast”	Days to week	•Long-term LVAD
INTERMACS LEVEL 3	Stable but Dependent	Weeks	
INTERMACS LEVEL 4	“Frequent flyer”	Weeks to few months, if baseline restored	•Medical therapy •Conventional surgery •HTx waiting list •Mitraclip?? •Cardioband??
INTERMACS LEVEL 5	“Housebound”	Weeks to months	
INTERMACS LEVEL 6	“Walking wounded”	Months, if nutrition and activity maintained	
INTERMACS LEVEL 7	Advanced Class III		

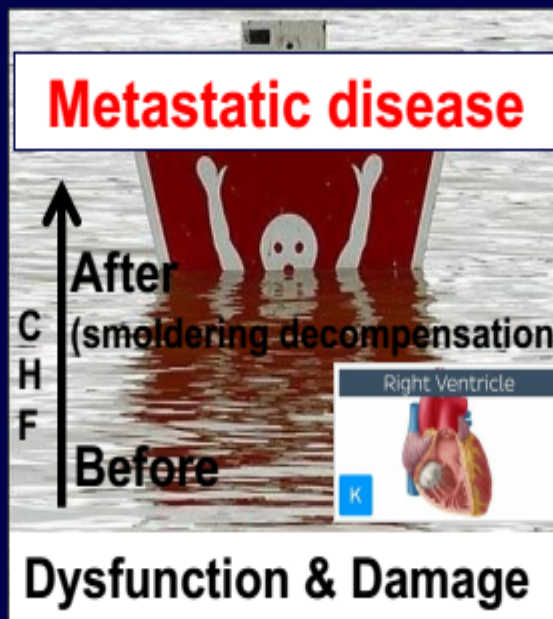
Importance of the RV

- We do NOT have great solution for long-term RV MCS (RVAD)

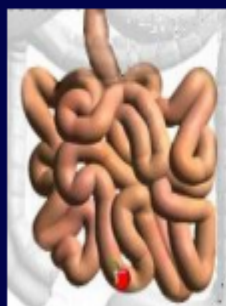


- Progressive RV dysfunction causes end-organ damage (irreversible?)

Venous Congestion = Inflammation & Oxidative Stress



NOT OHT /LVAD candidate



Endotoxemia



Can we safely and effectively treat less sick non-inotrope dependent patients?

	NYHA Class III	Class III B		Class IV (Ambulatory)		Class IV (On Inotropes)		
INTERMACS Profiles	7	6	5	4	3	2	1	
Percent of current implants in INTERMACS ¹	1.0%	1.4%	3.0%	14.6%	29.9%	36.4%	14.3%	
		FDA Approval: Class III B/IV						
	CURRENTLY NOT APPROVED	LIMITED ADOPTION		GROWING ACCEPTANCE				

Prospective, **nonrandomized**, **observational**, multicenter clinical trial N= 200

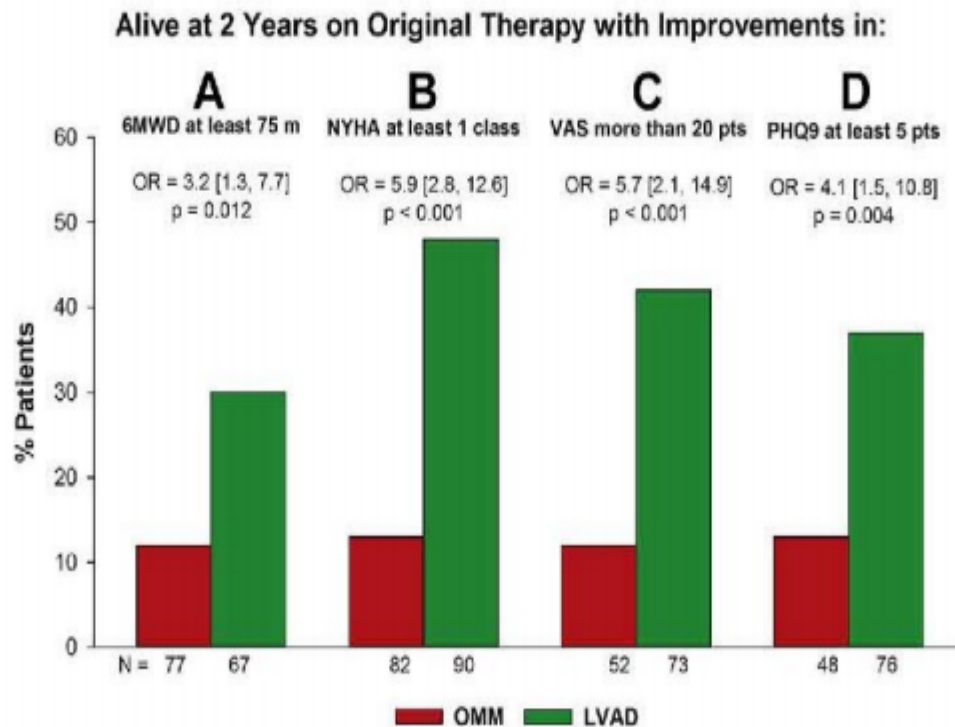
**ROADMAP
Non-inotrope
dependent**



¹Kirklin et al J Heart Lung Transplant 2014; 33:555-64
GL-HM2-04150215

Improved 6MWT, NYHA, QOL and Depression in LVAD Patients

FIGURE 5 Primary and Secondary Composite Endpoints



*Largest to smallest
...in ten years...*

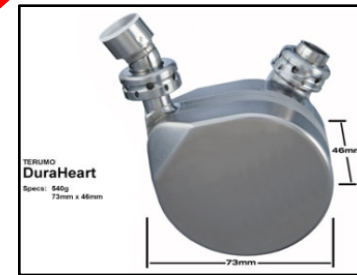
4° Generation

100 grams



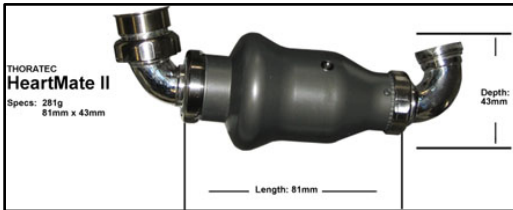
92 grams

3° Generation



500 grams

2° Generation



300 grams



1° Generation

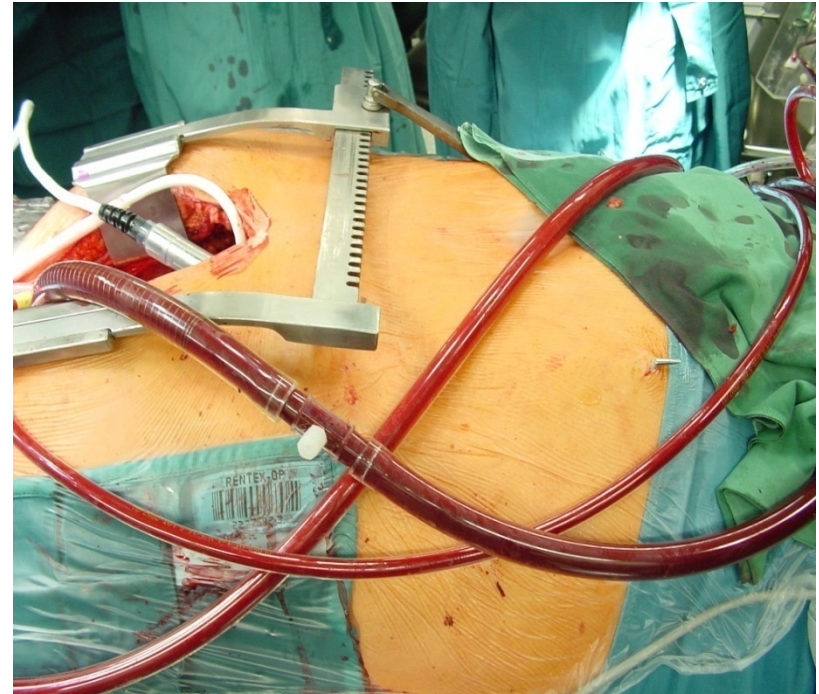
750 grams



100 grams

1000 grams

*Ten years ago.....*Implantation

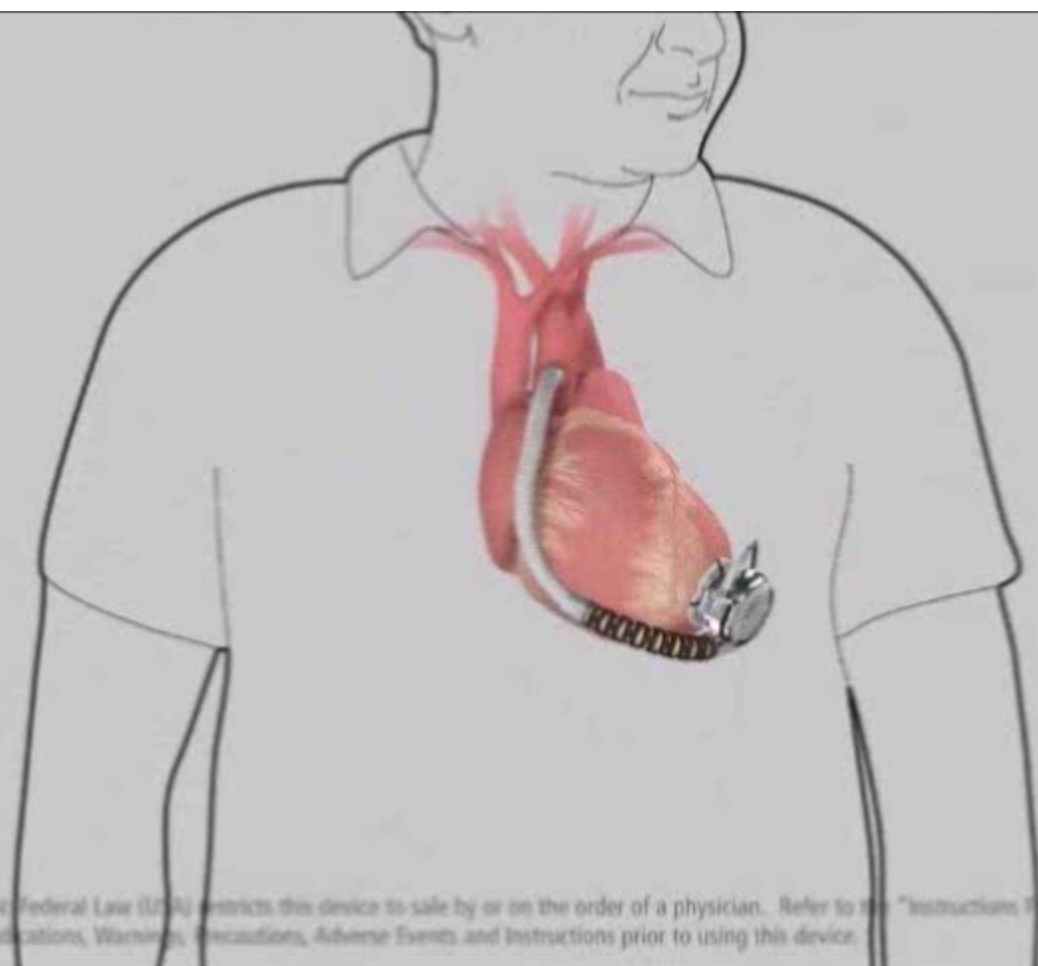


Heartware LVAD

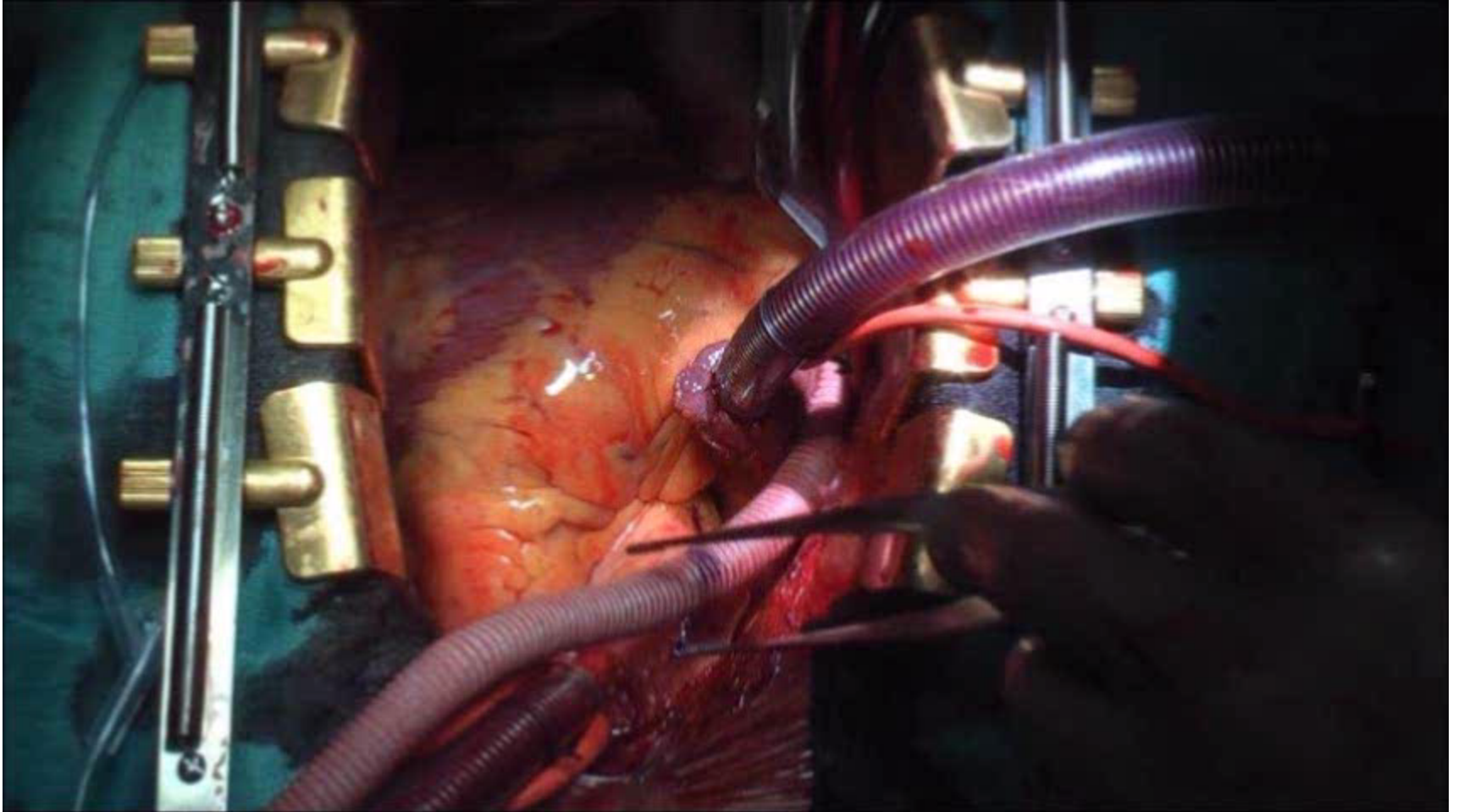


HeartWare® Ventricular Assist System

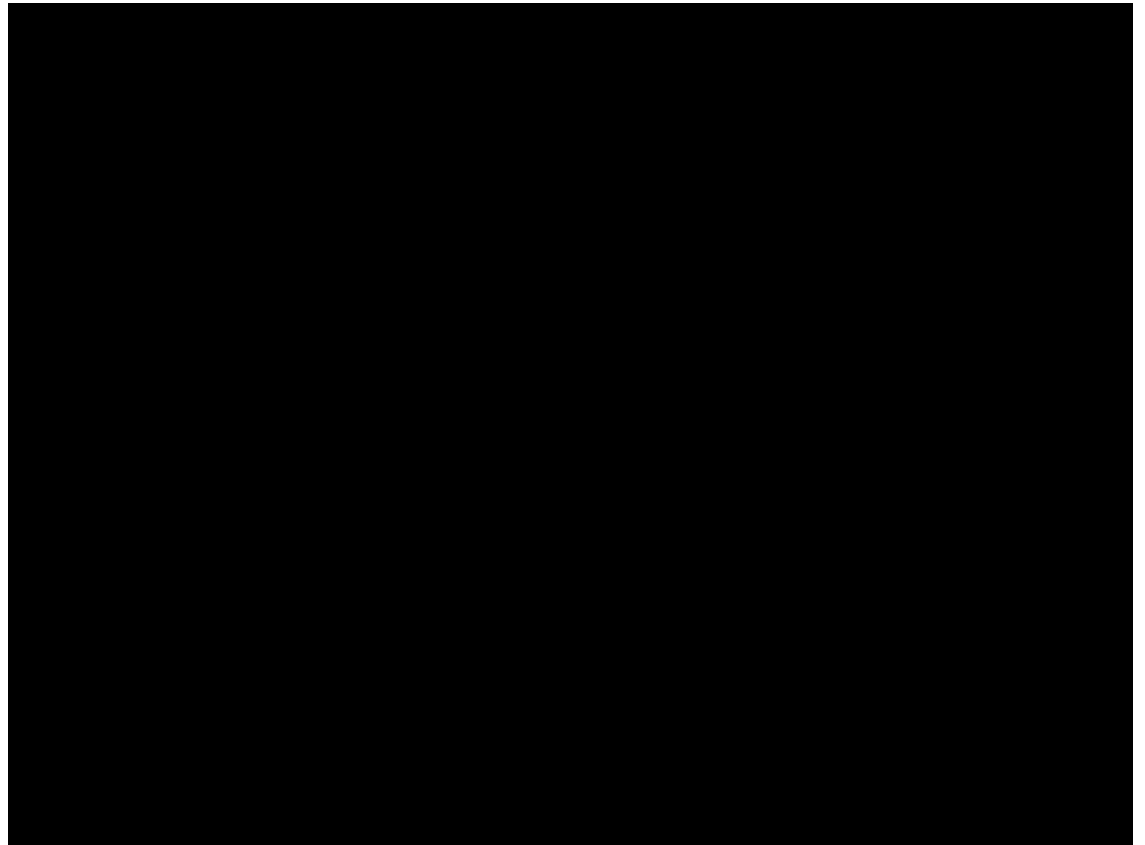
CAUTION: Federal Law (USA) restricts this device to sale by or on the order of a physician. Refer to the "Instructions For Use" for complete Indications for Use, Contraindications, Warnings, Precautions, Adverse Events and Instructions prior to using this device.



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Heartmate 3 LVAD



Minimally Invasive HM3 LVAD

Off pump implantation



Pre

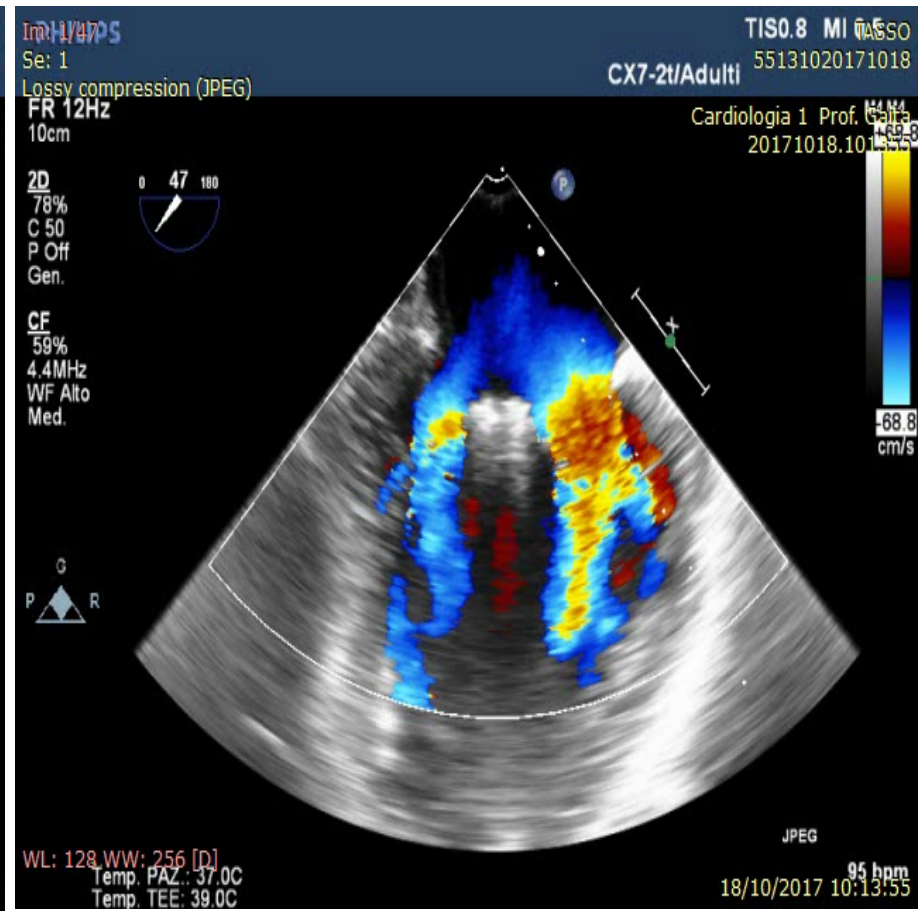
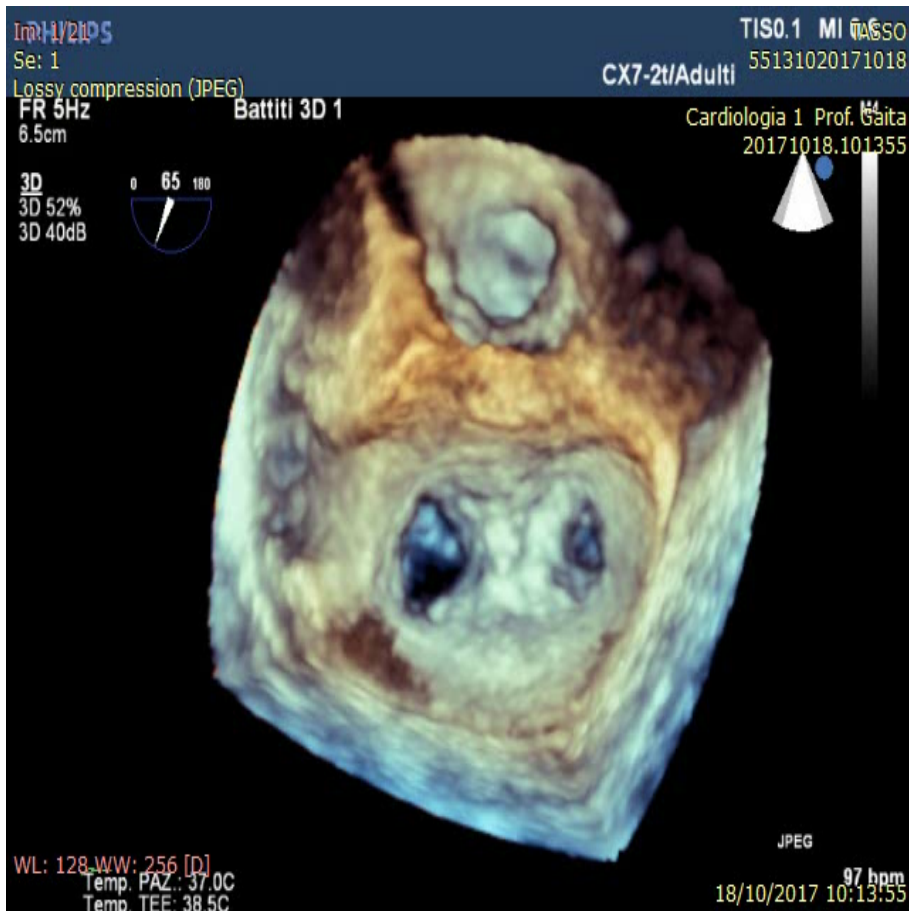


Post



Mitral valve stenosis after Mitraclip implantation

1 or 2 clips makes the difference!!



**LVAD HM3 minimally invasive implantation
Mitraclip removal through torachotomy approach**



The impact of MITRACLIP on LVAD therapy

Underestimation of mitral stenosis for low Cardiac Index

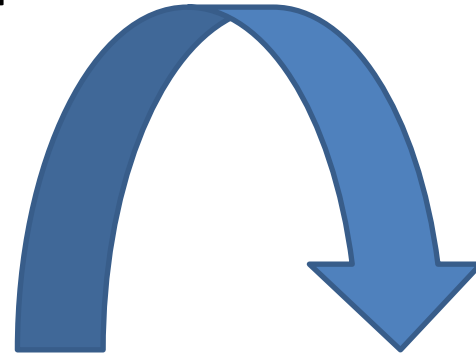
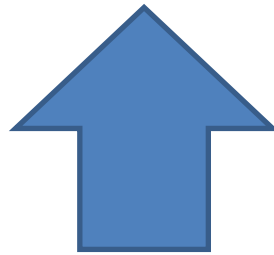
Residual moderate mitral regurgitation (mitral leaflets damage during operation)

Reduced LV unloading

Reversibility of pulmonary hypertension in BTC strategy?

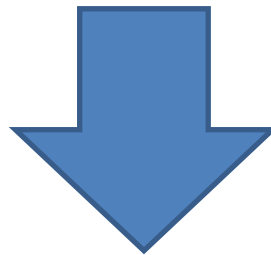
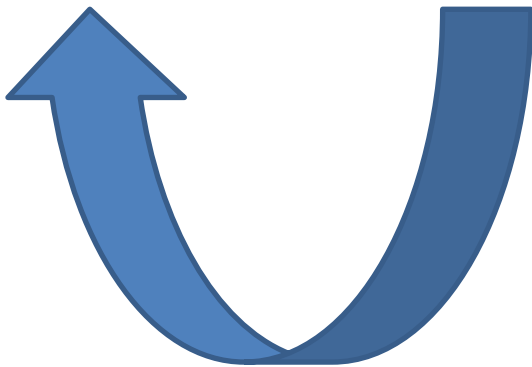
MITRACLIP

Percutaneous repair



Better Quality of life

INVASIVE PROCEDURE ? long-term survival ?



Irreversible alteration of normal anatomy