

What is the Potential Increase of the Heart Graft Pool by Cardiac Donation after Circulatory Death ?

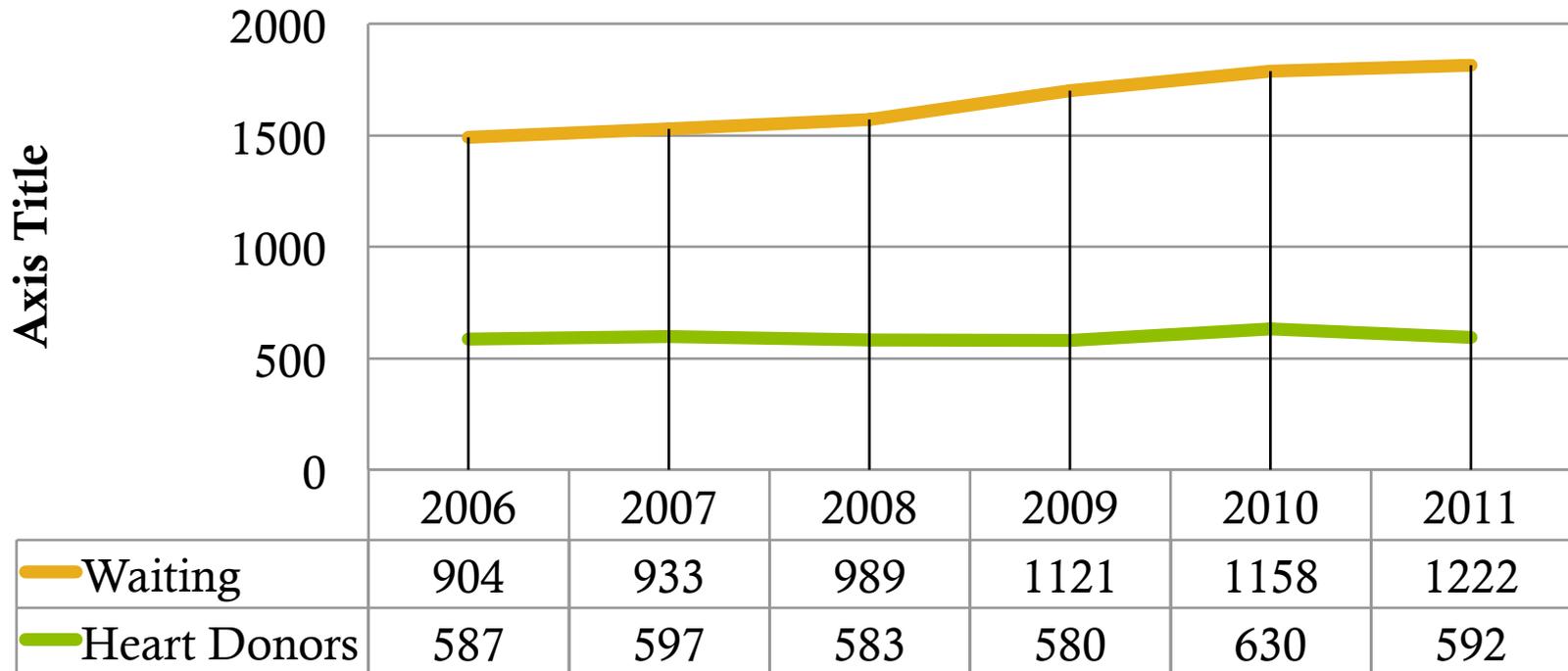
Tim Noterdaeme, O Detry, MF Hans, E Nellessen,
D Ledoux, J Joris, M Meurisse, JO Defraigne

Dpt of Surgery & Transplantation
Dpt of Anaesthesiology & ICU



A well known problem

Chart Title



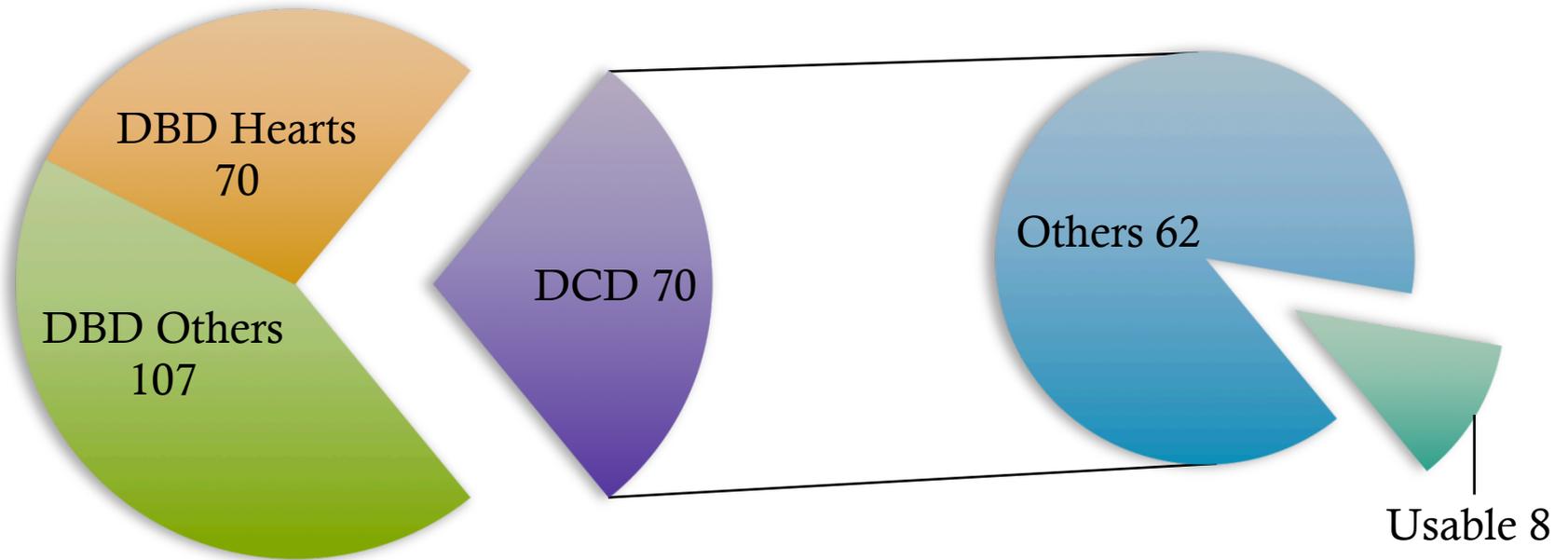
How to fill the Gap ?

- ◆ Extended criteria within donation after brain-death ?
- ◆ VAD ?
- ◆ Potentially using hearts retrieved from donation after circulatory death (DCD)?

What have we done ?

- ◆ Retrospectively screen local database for potential DCD heart-donors
- ◆ From 2006-2011
- ◆ Same inclusion criteria as DBD
- ◆ But WIT < 30 min
- ◆ WIT = (turn off ventilation → cannulation)

What are the Results ?



During the same Time

- ◆ 82 Newly listed Patients for Heart-Transplantation
- ◆ 53 Were transplanted
- ◆ 20 Died (or unlisted)
- ◆ 9 Still waiting for Transplantation

Compared

	Timespan	Population	Suitable	Increase in activity
Liège	2006-2011	70 DCD	8 (11%)	15%
Osaki et al. (Wisconsin)	2004-2006	78 DCD	12 (15%)	17%
Singal et al. (GLDP)	2001-2003	119 DCD	14-21 (12-18%)	4-6%

In details

	DBD-Hearts (70)	DCD-Hearts (8)	P-value
Age (years)	35.6 ± 1.6	35 ± 3.4	0.89
Female (%)	31.4	25	0.71
CPR (%)	10	12.5	0.89
COD:			
- Anoxia	16.5	0	0.2
- Trauma	65	50	0.48
- CVA	18.5	37.5	0.21
- Other	0	12.5	
BMI	23.6 ± 0.5	22.9 ± 1.3	0.66
ICU-stay (days)	3.3 ± 0.4	4.9 ± 0.6	0.19
Diuresis (ml)	3817 ± 207	3454 ± 551	0.58
Inotropic –support (%)	82.8	25	0.0015
DWIT (min)		15.1 ± 0.5 (13-17)	
Withdrawal phase (min)		7.0 ± 0.7 (3-10)	
Acirculatory phase (min)		8.1 ± 0.6 (5-10)	



An Interesting Finding

- ◆ DCD need significantly less inotropic support.
- ◆ In DBD, brain ischemia induces a catecholamine surge responsible for a high peripheral resistance, myocardial stunning and lesions.
- ◆ Reversible after 12-16 days
- ◆ Due to the nature of DCD, this is absent.

In Summary

- ◆ 11 % of DCD are potential heart-donors
- ◆ Leading to an increase of 15 % in HT-activity
- ◆ Reduction of 40 % of death on waiting list
- ◆ Questions remaining
 - ◆ Quality of the organ ?
 - ◆ Initial allocation ?
 - ◆ Ethical issues ?

On the waiting list since 1939

