

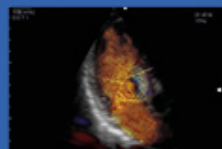
EuroValve

March 27 - 28, 2015

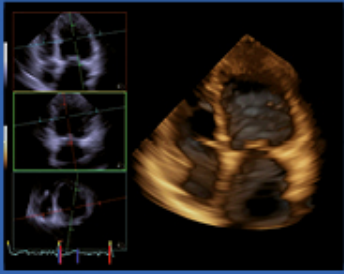
MitraClip Therapy Clinical Evidence & Trial Program

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www.eurovalvecongress.com



EuroValve

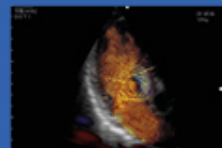
March 27 - 28, 2015

Faculty disclosure

Victoria Delgado

I disclose the following financial relationships:

Paid speaker for Abbott Vascular

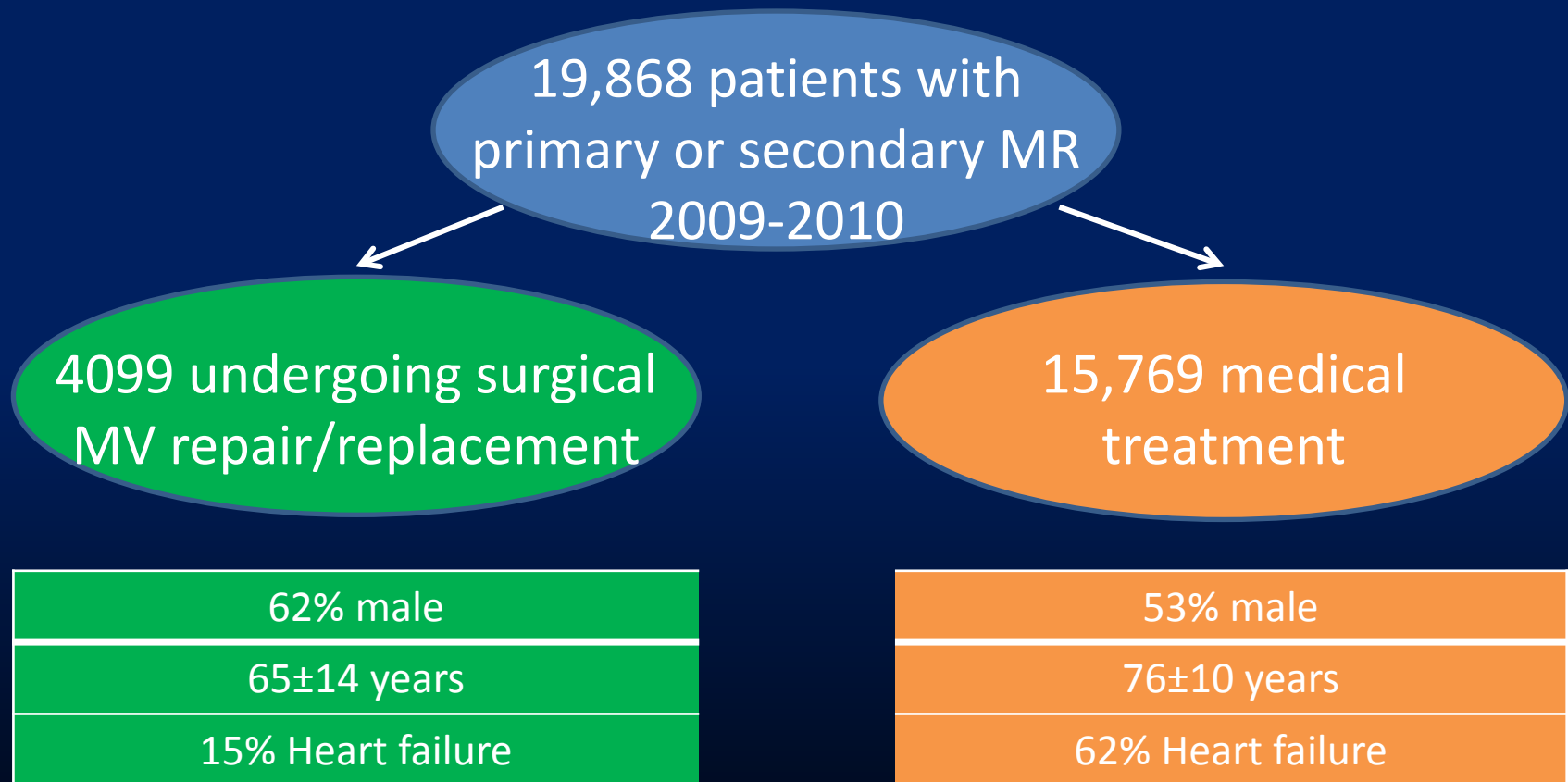


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Why to treat MR?

- Mitral regurgitation: the second most frequent valvular heart disease
- Associated with heart failure
- Increasing economic burden

Prevalence of MR and treatment



Derived costs

	Surgical treatment (N=4099)		Medical treatment (N=15,769)	
	Repair (N=2567)	Replacement (N=1532)	Heart failure (N=9774)	No-HF (N=5995)
Length of stay (days)	15 ± 12.5	12.1 ± 17.2	28 ± 22.1	16.5 ± 15
Index hospitalization costs (€)	19,158 ± 10,089	23,718 ± 13,222	11,431 ± 9394	8715 ± 7640

How has MitraClip helped?

20,000 patients treated worldwide

Mitraclip: patients, procedural times and outcomes



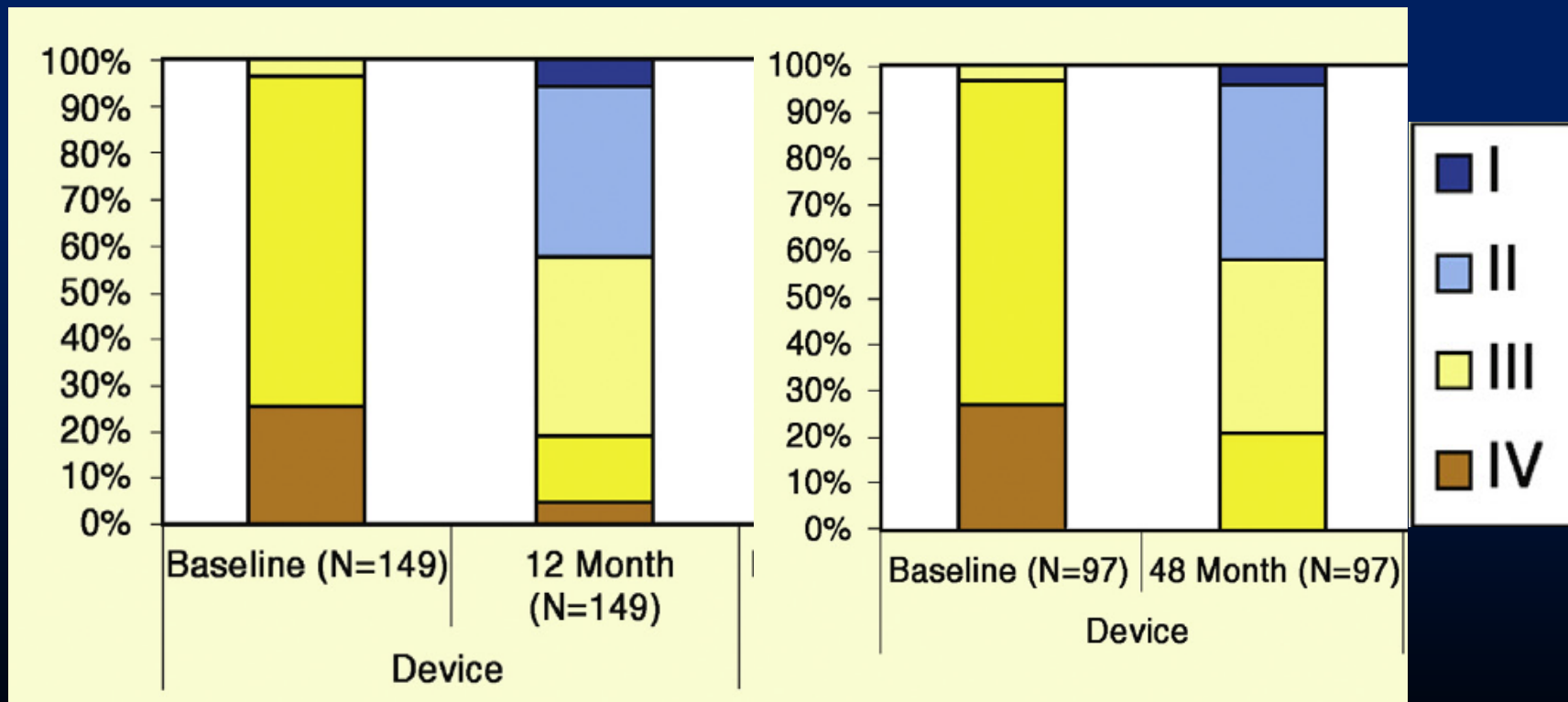
Registry (Ref. #)	N	Mean Age (yrs)	Male	Mean or Median Risk	NYHA Functional Class III/IV	Mean LVEF	FMR Etiology	≤2+ MR Post	Multiple Clips	Procedural Success*
TRAMI (90)	1,064	75	62%	10%†	87%	‡	71%	96%	1.5 mean	95%
ACCESS-EU (91)	567	78	64%	23%§	85%		77%	91%	40%	99.6%
European Sentinel (92)	628	74	63%	20%§	86%	43%	72%	98%	37%	95%
EVEREST II and REALISM (93)	351	76	61%	11%†	85%	48%	70%	86%	39%	–
GRASP (94)	171	71	62%	7%†	81%	37%	78%	93%	41%	99%
MARS (95)	142	71	64%	17%§	68%	47%	54%	77%	47%	94%
Taramasso et al. (96)	109	69	84%	22%§	82%	28%	100%	87%	65%	99%
MitraSwiss (97)	100	77	67%	17%§	82%	48%	62%	85%	40%	85%
French multicenter (98)	62	73	72%	19%§	81%	40%	74%	88%	17%	95%
Treede et al. (99)	202	75	63%	44%§	98%	44%	65%	92%	35%	92%
Bozdog-Turan et al. (100)	121	77	69%	11%†	96%	42%	59%	99%	28%	97%
Rudolph et al. (101)	104	74	62%	36%§	100%	43%	66%	92%	38%	92%
Braun et al. (102)	119	71	67%	28%§¶	86%	35%‡	35%¶	-	-	86%
Neuss et al. (103)	157	74	67%	22%§	100%	41%	73%	100%	16%	98%

Predominantly FMR

EVEREST II

N=184, 73% DMR

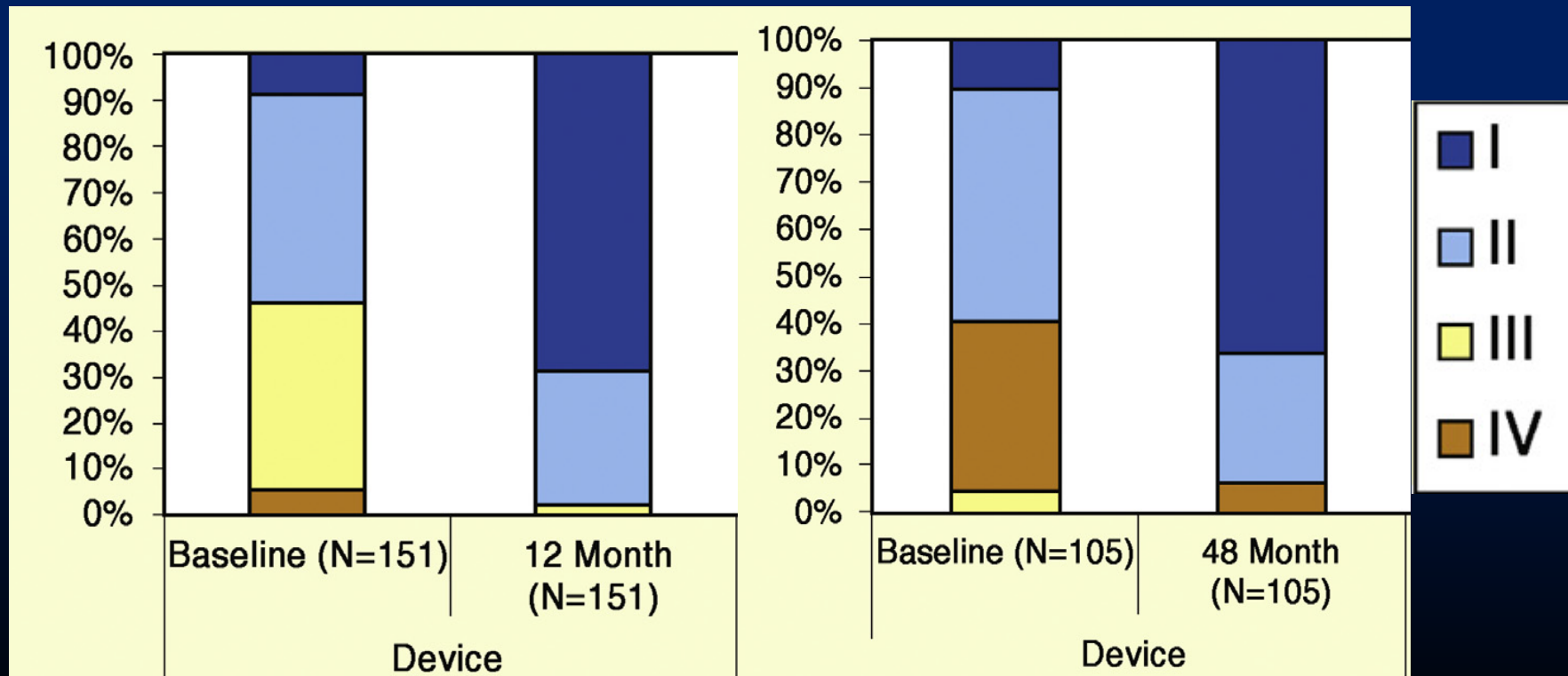
Sustained reduction in MR grade



EVEREST II

N=184, 73% DMR

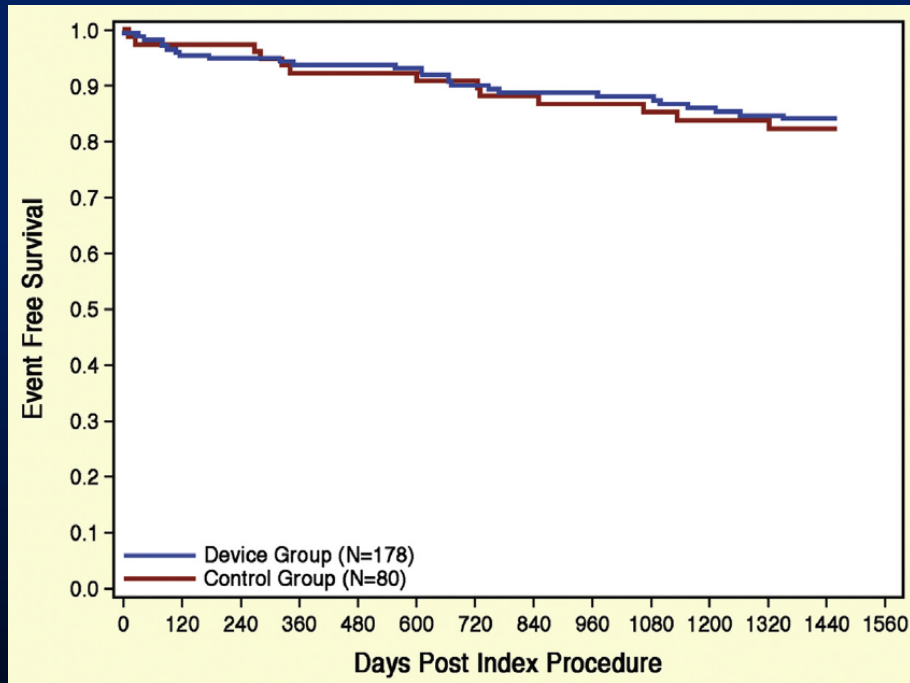
Sustained improvement in NYHA functional class



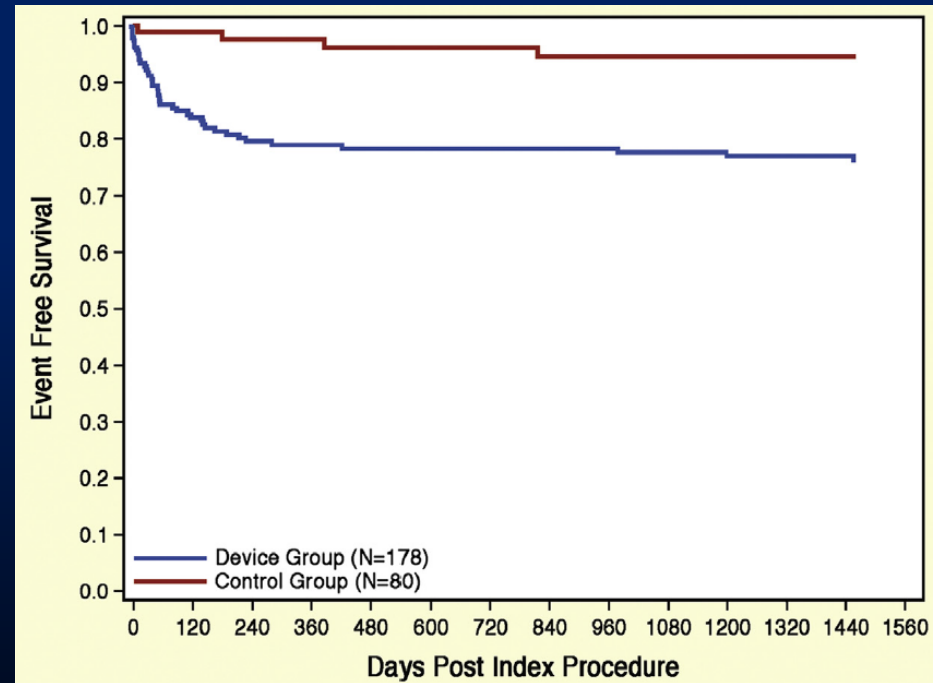
EVEREST II

N=184, 73% DMR

All cause mortality

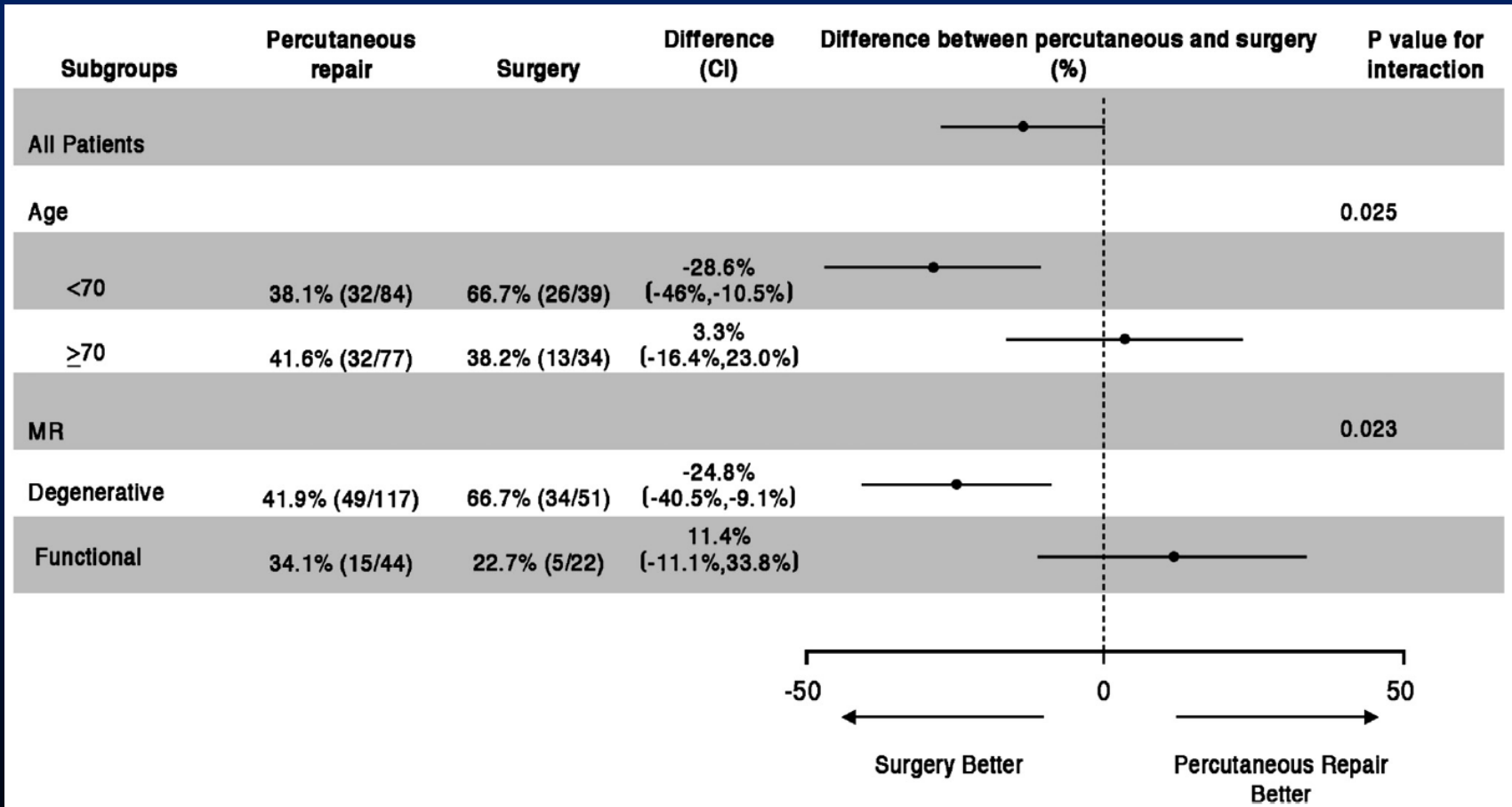


Freedom from reoperation



EVEREST II

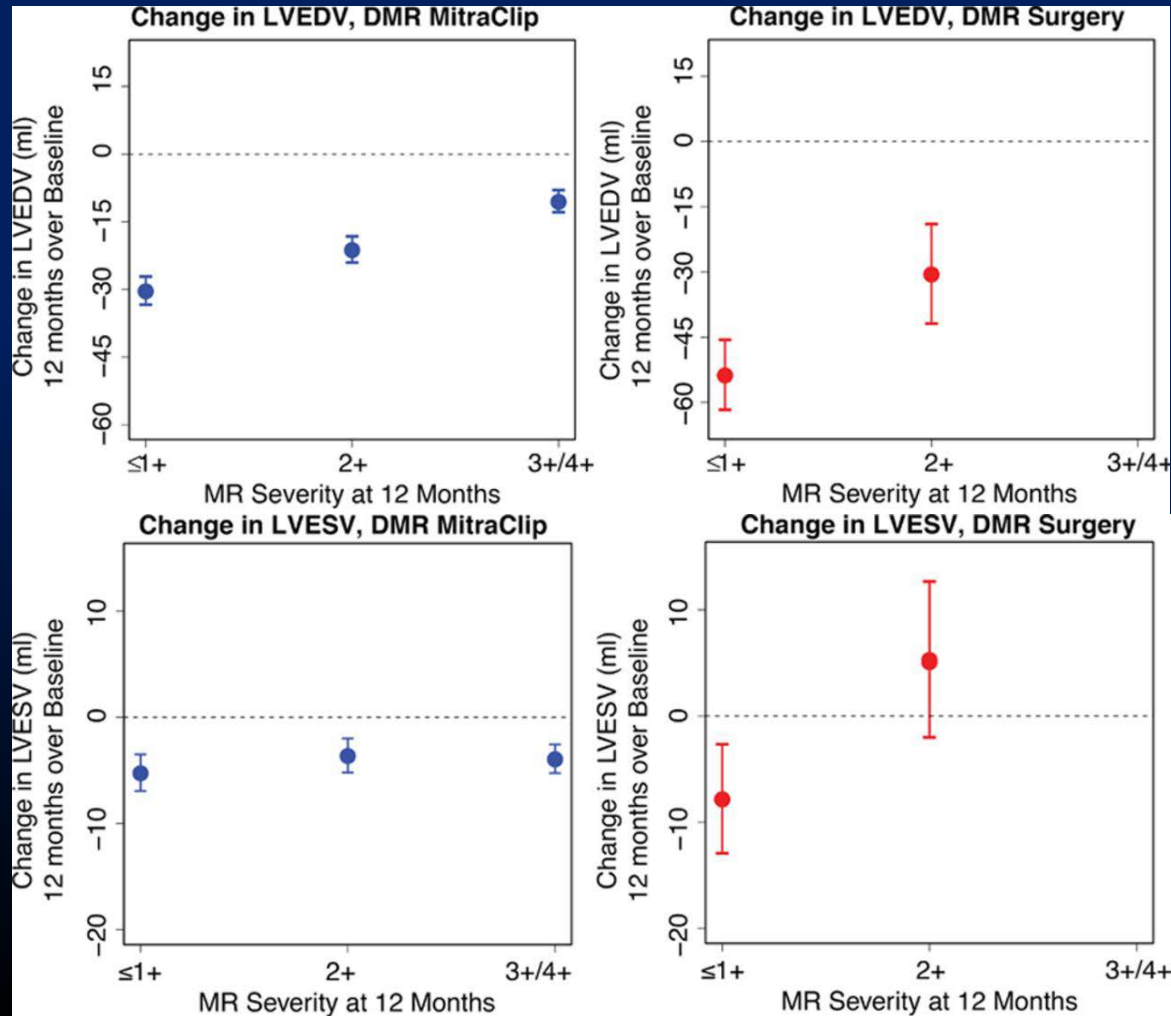
N=184, 73% DMR



EVEREST II + REALISM

N=801, 52% DMR

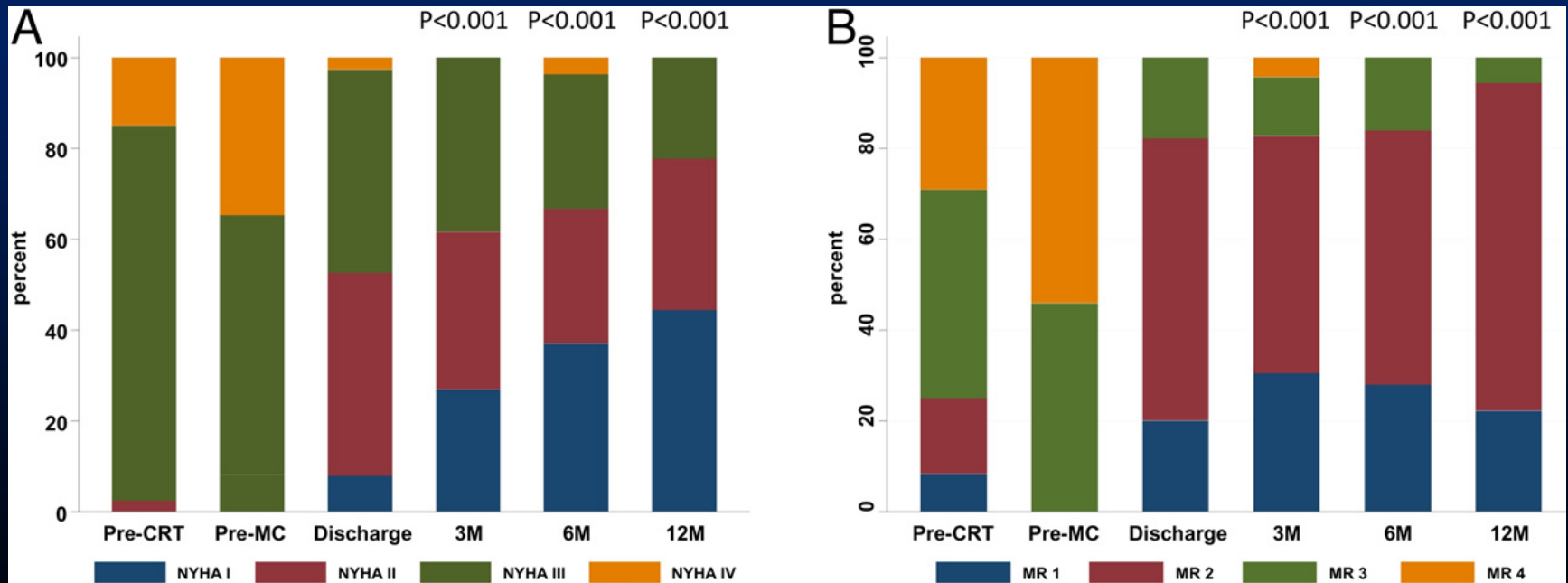
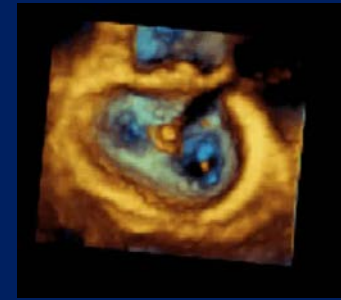
Paul A. Grayburn et al. *Circulation*. 2013;128:1667-1674



Percutaneous treatment of MR as bail-out therapy for non-responders to CRT PERMIT-CARE

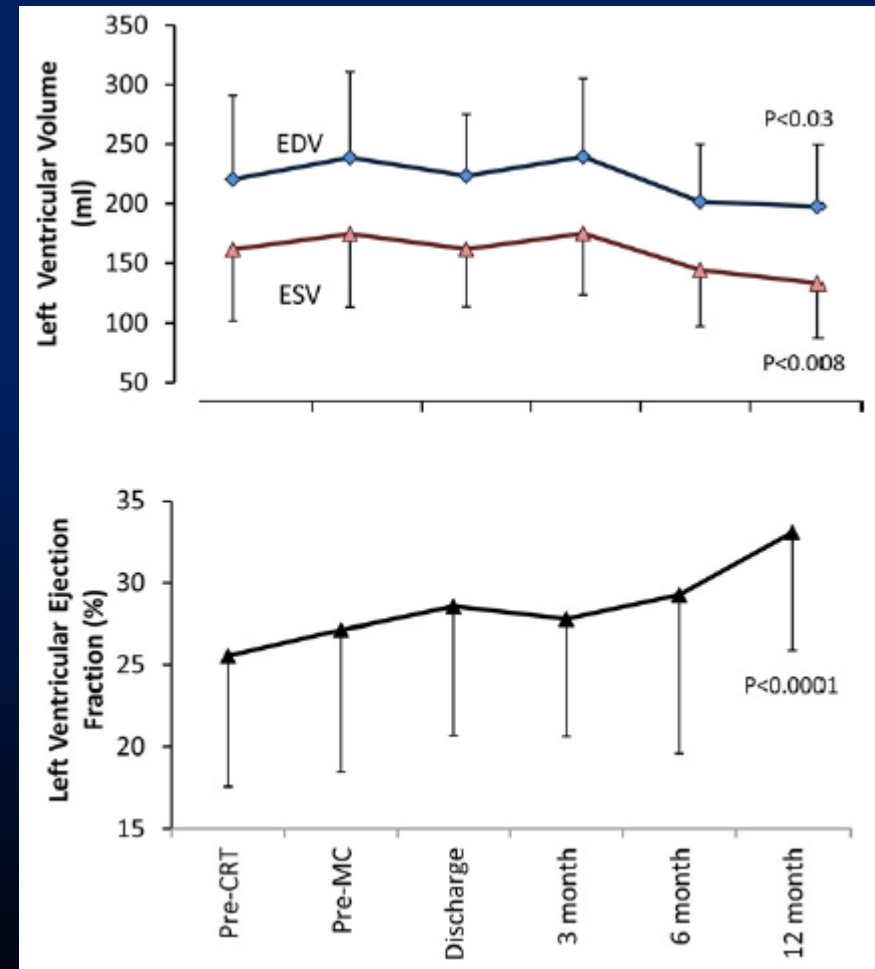


N = 51



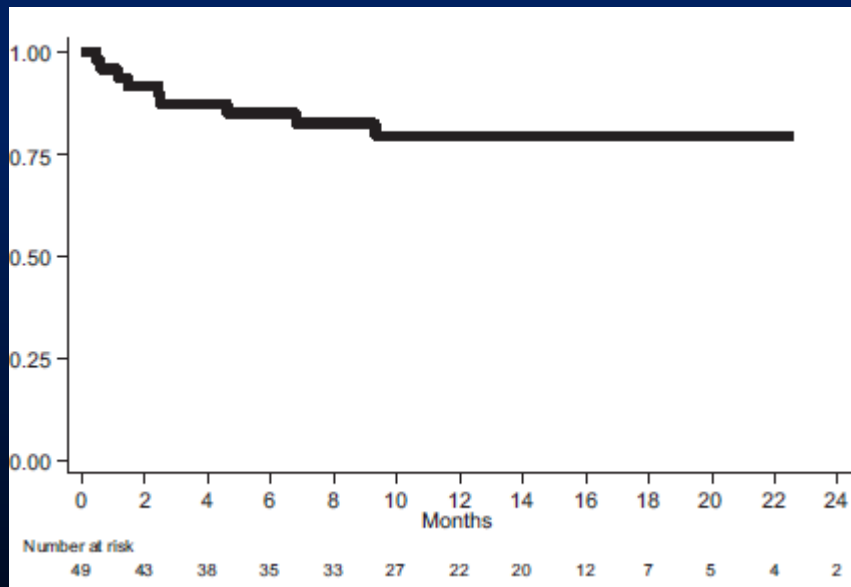
Percutaneous treatment of MR as bail-out therapy for non-responders to CRT

Total procedure time (min)	172.1 ± 82.9
Total device time (min)	102.8 ± 62.9
Fluoroscopy time (min)	31.6 ± 18.1
Deployment of >1 clip	25 (49)
Use of inotropic drugs	35 (67)
Complications	
Acute heart failure	7 (14)
Cardiac tamponade	1 (2)
Acute bleeding requiring transfusion	5 (10)
Urgent surgical valve repair/replacement	1 (2)
Death	1 (2)

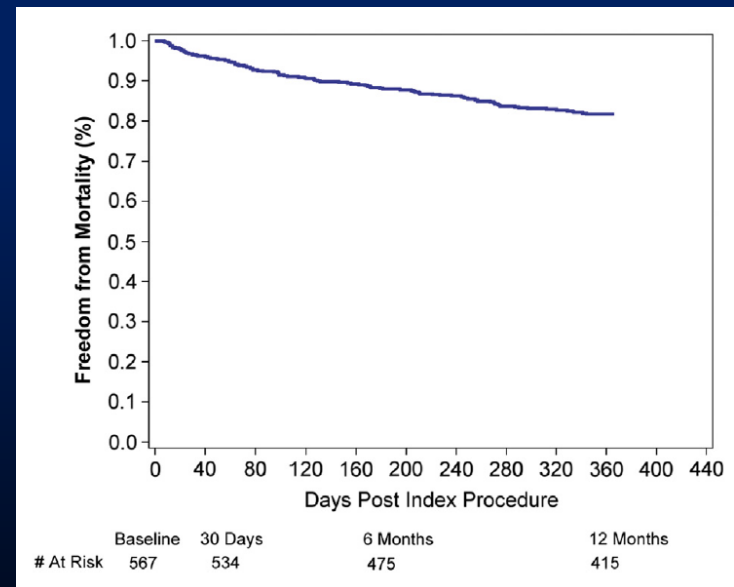


Percutaneous treatment of MR as bail-out therapy for non-responders to CRT

PERMIT-CARE



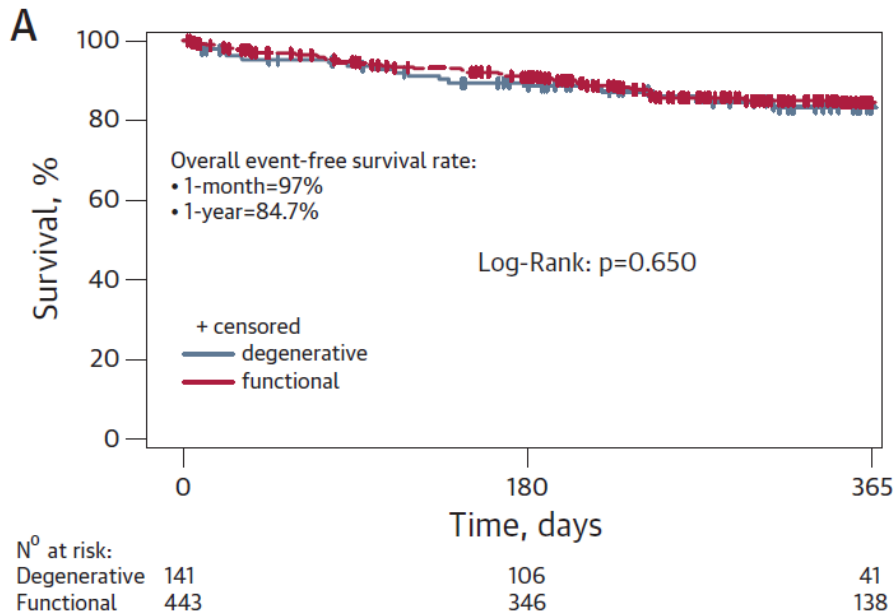
ACCESS-EU



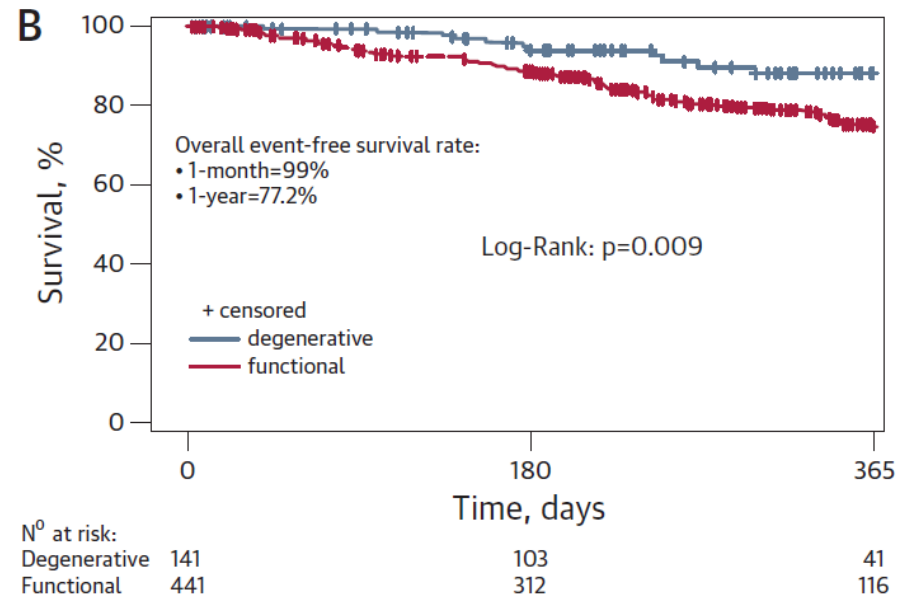
FMR vs. DMR

SENTINEL PILOT study

N=628, 72% FMR



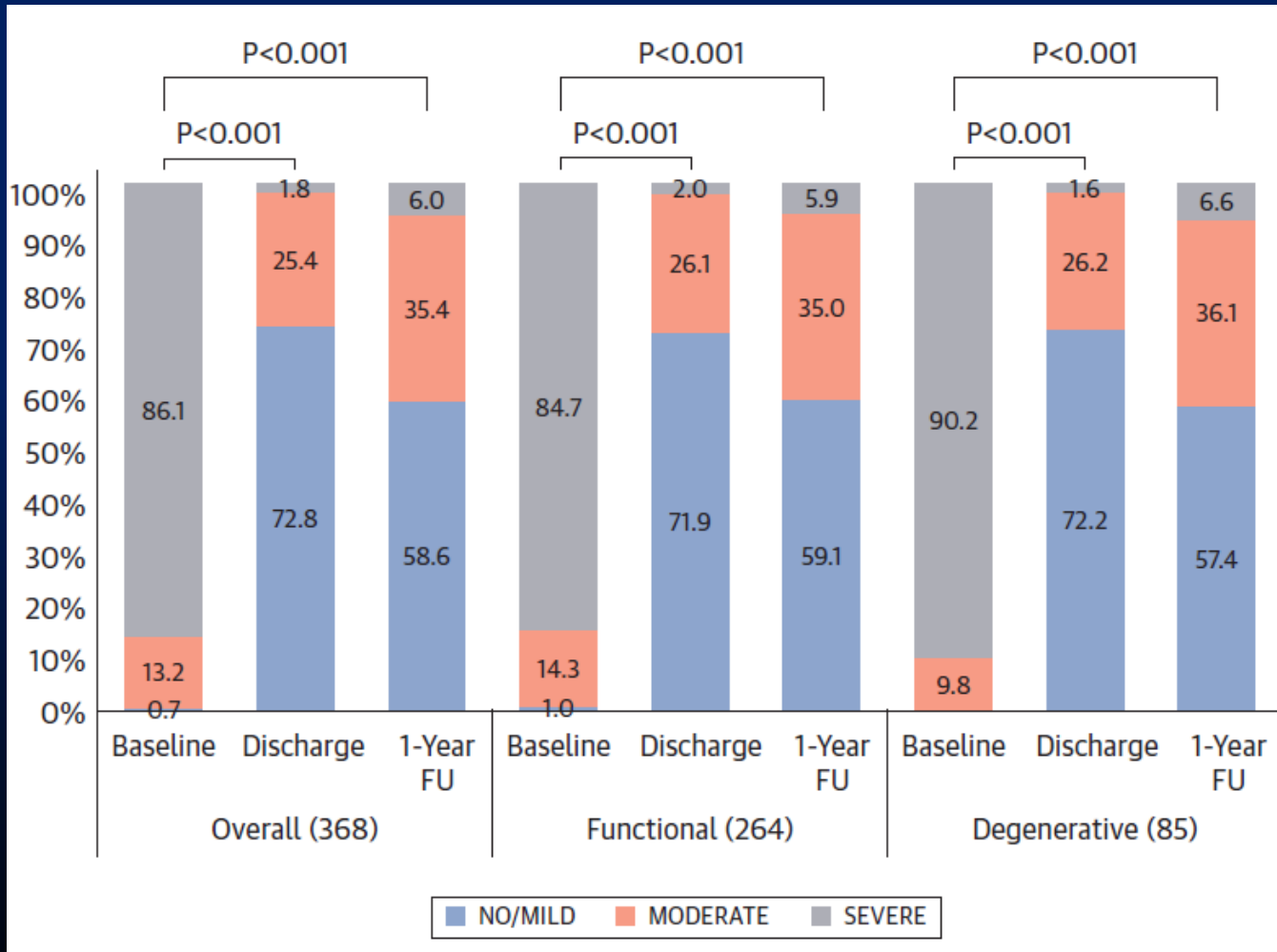
All-cause mortality



HF rehospitalization

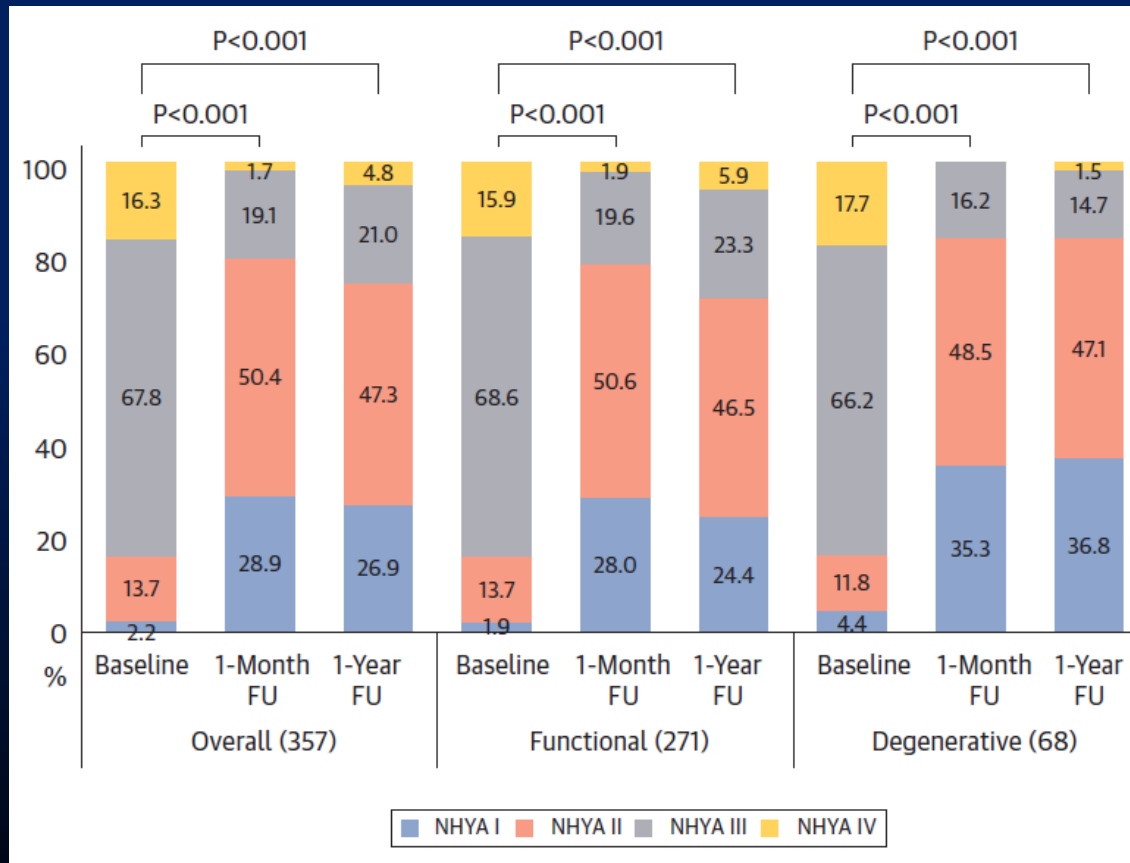
FMR vs. DMR

SENTINEL PILOT study



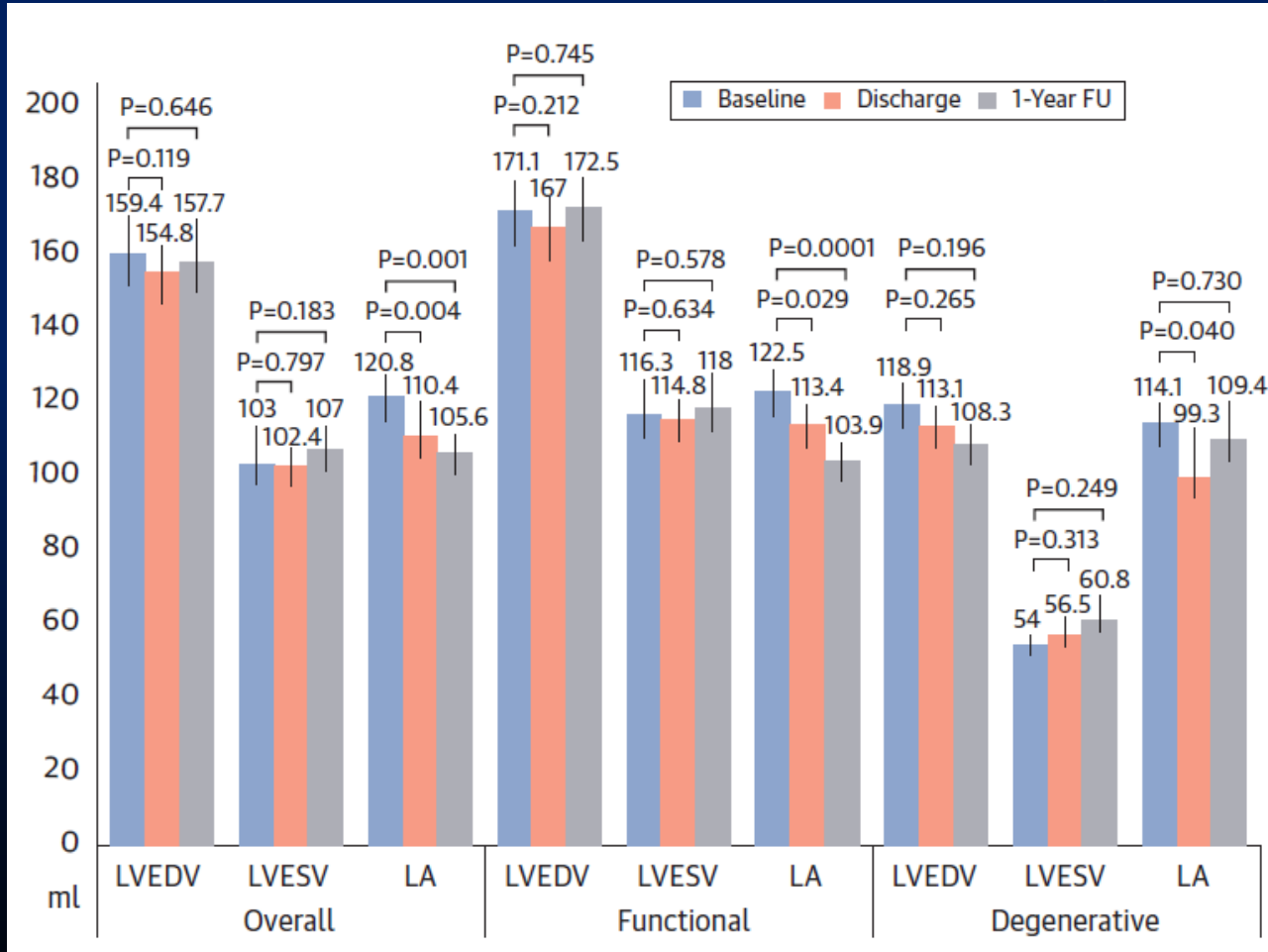
FMR vs. DMR

SENTINEL PILOT study



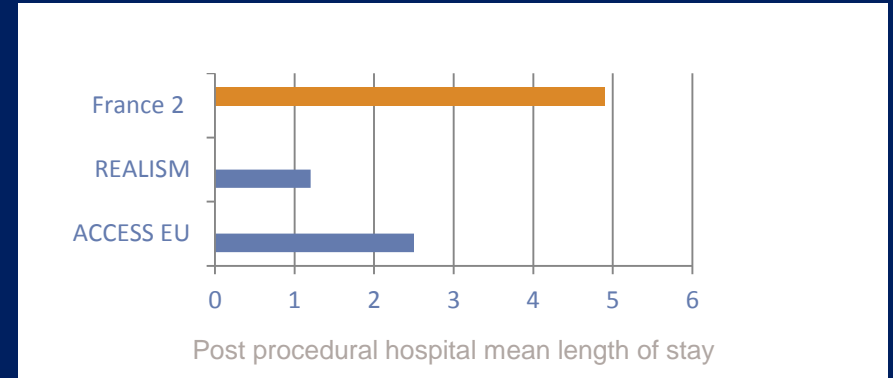
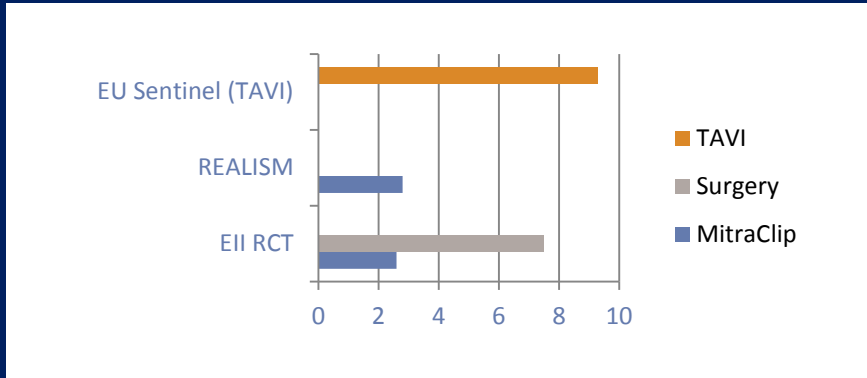
FMR vs. DMR

SENTINEL PILOT study

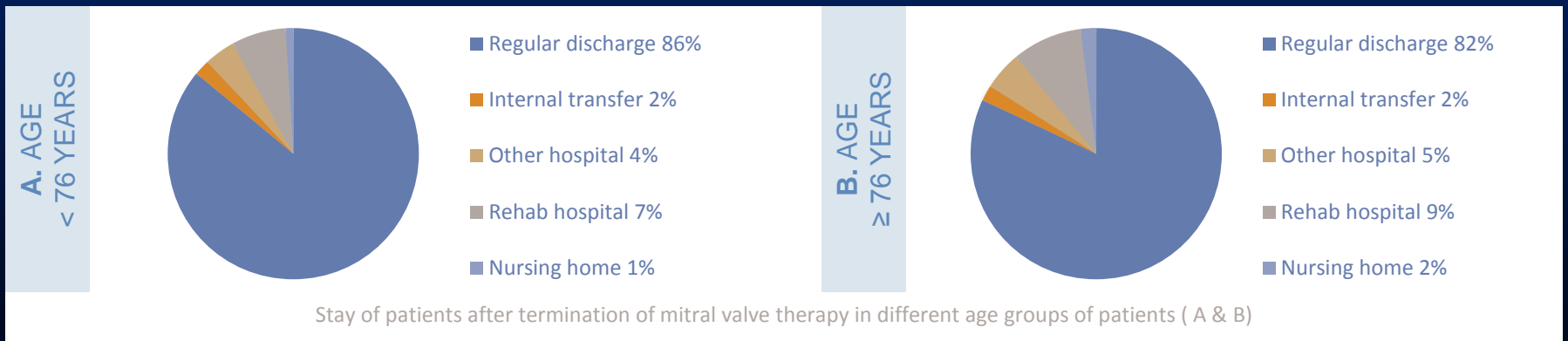


Decreased burden of cost to the HealthCare system

Short length of stay^{1,2&3}



Most of patients are discharged directly at home⁵



1. C.Di Mario (Eurointervention 2012) 2. T. Feldman, et al., The New England journal of medicine 364, 1395 (2011) 3. S. Kar, et al., Journal of the American College of Cardiology 61, E1959 (2013) 4. M Gillard (NEJM 2012) 5. J. Wiebe, et al., Catheterization and cardiovascular interventions : official journal of the Society for Cardiac Angiography & Interventions (2014).

Decreased burden of cost to the HealthCare system

- Cost-effectiveness study: EVEREST II HRS
 - MitraClip therapy to have a 92% chance of being cost-effective compared with standard of care at a willingness-to-pay threshold of \$50,000 per QALY gained.

On going trials

	COAPT	RESHAPE-HF	MITRA-FR
Number of patients and sites	430 patients at 75 U.S. and Canadian sites	800 patients at 50 E.U. sites	288 patients at 18 French sites
Secondary MR grade (core laboratory verified)	≥3+ (EROA ≥30 mm ² and/or Rvol >45 ml)	≥3+ (EROA ≥30 mm ² and/or Rvol >45 ml)	Severe (EROA >20 mm ² + Rvol >30 ml)
NYHA functional class	II, III, or ambulatory IV	III or ambulatory IV	II-IV
LVEF	≥20% to ≤50%	≥15% to ≤40%	≥15% to ≤40%
Surgical criteria	Not appropriate for mitral valve surgery (heart team)	None	None
Left ventricular volume entry criterion	LV end-systolic dimension ≤70 mm	LV end-diastolic dimension ≥55 mm	None
Control arm	Guideline-directed medical therapy (+CRT, if indicated)	Guideline-directed medical therapy (+CRT, if indicated)	Guideline-directed medical therapy (+CRT, if indicated)
Primary efficacy endpoint (superiority)	Heart failure rehospitalizations at 1 yr	Death or heart failure hospitalization at 1 yr	Death or recurrent heart failure hospitalization at 1 yr
Primary safety endpoint (noninferiority)	The composite of: SLDA; device embolization; endocarditis requiring surgery; echocardiography core laboratory-confirmed mitral stenosis requiring surgery; LVAD implant; heart transplant; or any device-related complications requiring nonelective cardiovascular surgery at 12 months	None	None
Health economics	Assessed	Assessed	None
Follow-up, yrs	5	2	2

Conclusions

- MitraClip is a feasible and safe therapy for selected patients with significant MR
- Induces significant improvements in clinical symptoms and LV dimensions
- May be associated with reduced costs (compared with surgical and medical treatment)
- Future studies will help to establish the role of this therapy in selected subgroups of patients