2018 MID-ATLANTIC
CONFERENCE

8th ANNUAL CURRENT CONCEPTS IN
VASCULAR THERAPIES

2018

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FACC, FSCAI

April 27, 2018

Signs, Symptoms and Treatment of Heart Failure

Economic Burden

- 25% will be Readmitted within 30 days
- 50% will be Readmitted within 6 months
- 90% will be Readmitted due to Congestion
- Medicare has Levied Penalties for Hospitals with Readmission rates above expected since 2015
- Readmissions Predict Mortality AHJ 07 154:260-266

Signs and Symptoms

Don't let your **symptoms** of heart failure <u>WORSEN</u>

Weight gain

Orthopnea

Resting more than usual

Shortness of breath

Edema

Non-productive cough

Call your cardiologist for help!

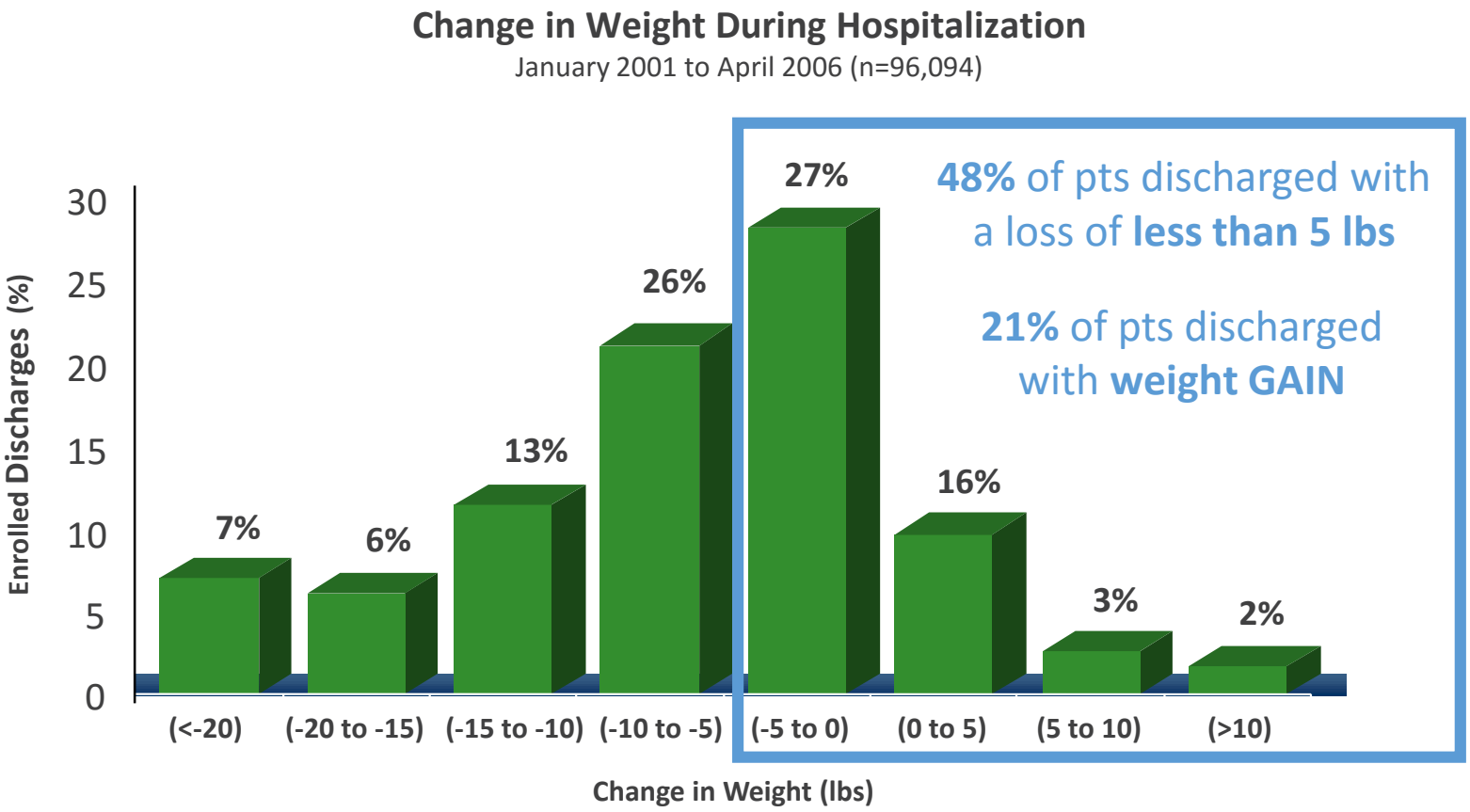
Guideline Medical Therapy for HFrEF

- ACE/ARB
- Beta Blockers- carvedilol and metoprolol succinate
- Spironolactone
- Isordil combination with Hydralazine
- Digoxin
- Ivabradine
- Entresto

Diuretic for HFrEF

- Class I
- No studies
- Relieves Congestion
- Activates RAS
- Decreases MAP, Renal blood flow, and Stroke Volume
- DOSE Trial - 2.5X Oral Lasix Dose IV Twice Daily

ADHERE Registry Gathered Nationwide Data



Are current treatment strategies producing desired patient outcomes?

European Heart Journal 2005

chf solutions

Loop Diuretics

- Furosemide- 50% bioabsorbed, delayed with food T1/2 2.7hrs
- Bumetanide-90% bioabsorbed, T1/2=1.3 hrs
- Torsemide- 90% bioabsorbed, T1/2=6hrs

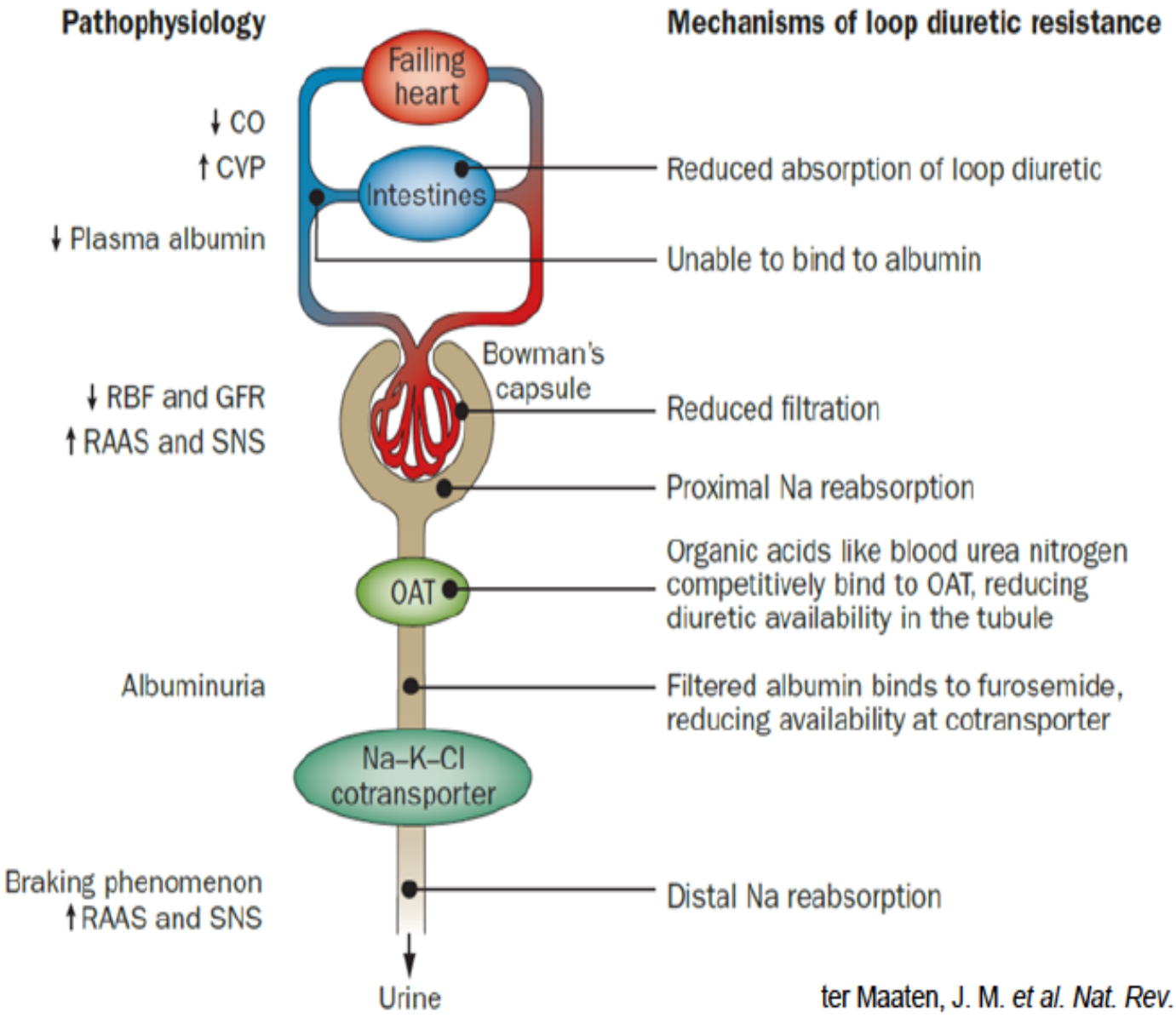
Diuretic resistance

- Diuretic resistance is defined as the failure of diuretics to achieve decongestion despite the use of maximal recommended doses.

Table 1. Causes of Diuretic Resistance.
Inadequate dose of diuretic
Nonadherence
Not taking drug
High sodium intake
Pharmacokinetic factors
Slow absorption of diuretic because of gut edema
Impaired secretion of diuretic into the tubule lumen
Chronic kidney disease
Aging
Drugs
Nonsteroidal antiinflammatory drugs*
Probenecid
Hypoproteinemia
Hypotension
Nephrotic syndrome
Antinatriuretic drugs
Nonsteroidal antiinflammatory drugs*
Antihypertensive agents
Low renal blood flow
Nephron remodeling
Neurohormonal activation

Ellison DH, Felker GM. Diuretic Treatment in HF. N Engl J Med 2017; 377:1964-1975

Mechanisms of Loop Diuretic Resistance



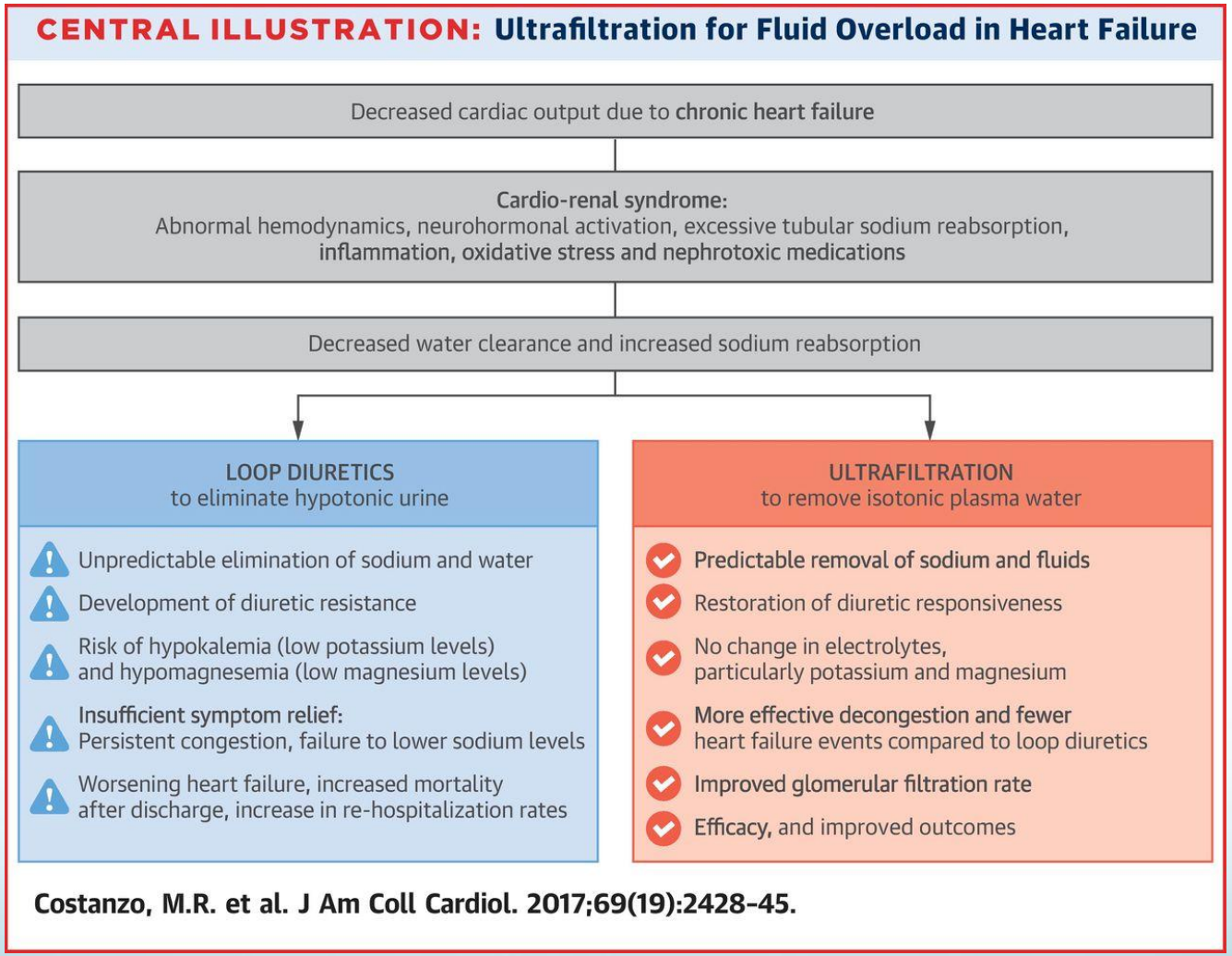
ter Maaten, J. M. *et al. Nat. Rev. Cardiol.* 12, 184–192 (2015);

7.4. Renal Replacement Therapy—Ultrafiltration

CLASS IIb

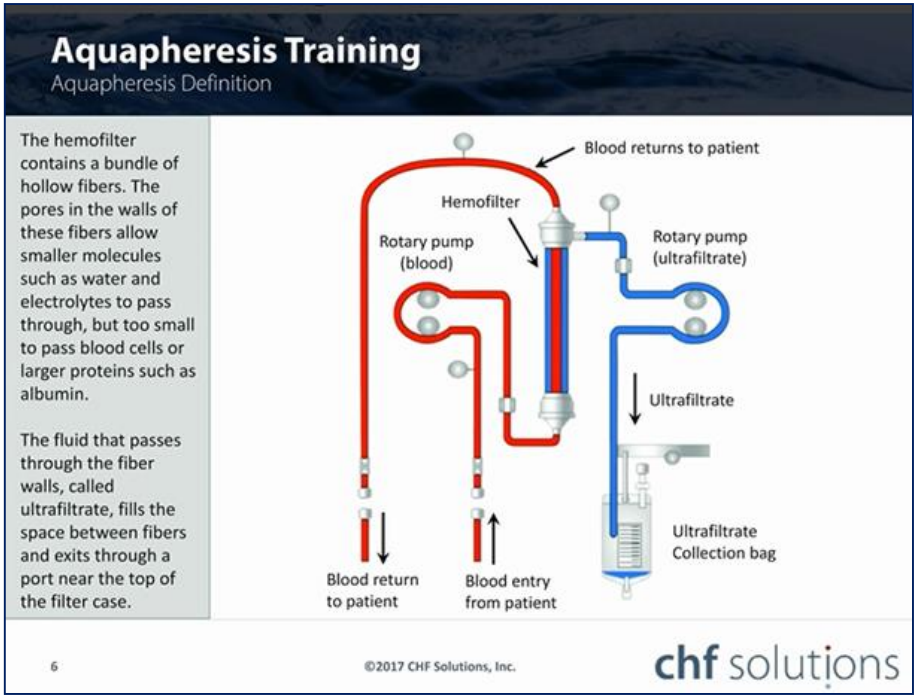
1. Ultrafiltration may be considered for patients with obvious volume overload to alleviate congestive symptoms and fluid weight (319). *(Level of Evidence: B)*
2. Ultrafiltration may be considered for patients with refractory congestion not responding to medical therapy. *(Level of Evidence: C)*

JACC 2013 pg 1518



Maria Rosa Costanzo et al. JACC 2017;69:2428-2445


prismaflex
Status
Prescription
Anticoagulation
CVVHDF
Info
TMP



Aquadex Capabilities

- Blood Flow: 40 ml/min
- UF Rate: 50-500 ml/hr
- Pressure Alarms
- Treatment time
- Total fluid removal

The Matters of Co$t

- One Filter $980
- Rental $ 1000 per month
- Purchase $31,000


aquadex
FlexFlow
Alaris PC
Pump
STOP
MANUAL
PRIME
RUN
F1
F2
F3
F4
CLEAR
ACCEPT
HELP
MENU
2
AHFU

Continuous Ultrafiltration fOr Congestive HeaRtFailurE

- Milan, Italy
- N=56 with Class III or IV, EF<40, Weight Gain >4kg
- LD(29) vs UF(27)- 19+10 Hrs
- Endpoint was Rehospitalization for HF at 1 year
- Diuretics were continued in both groups
- 37% of Patients Dead at one Year

Journal Cardiac Failure 2014

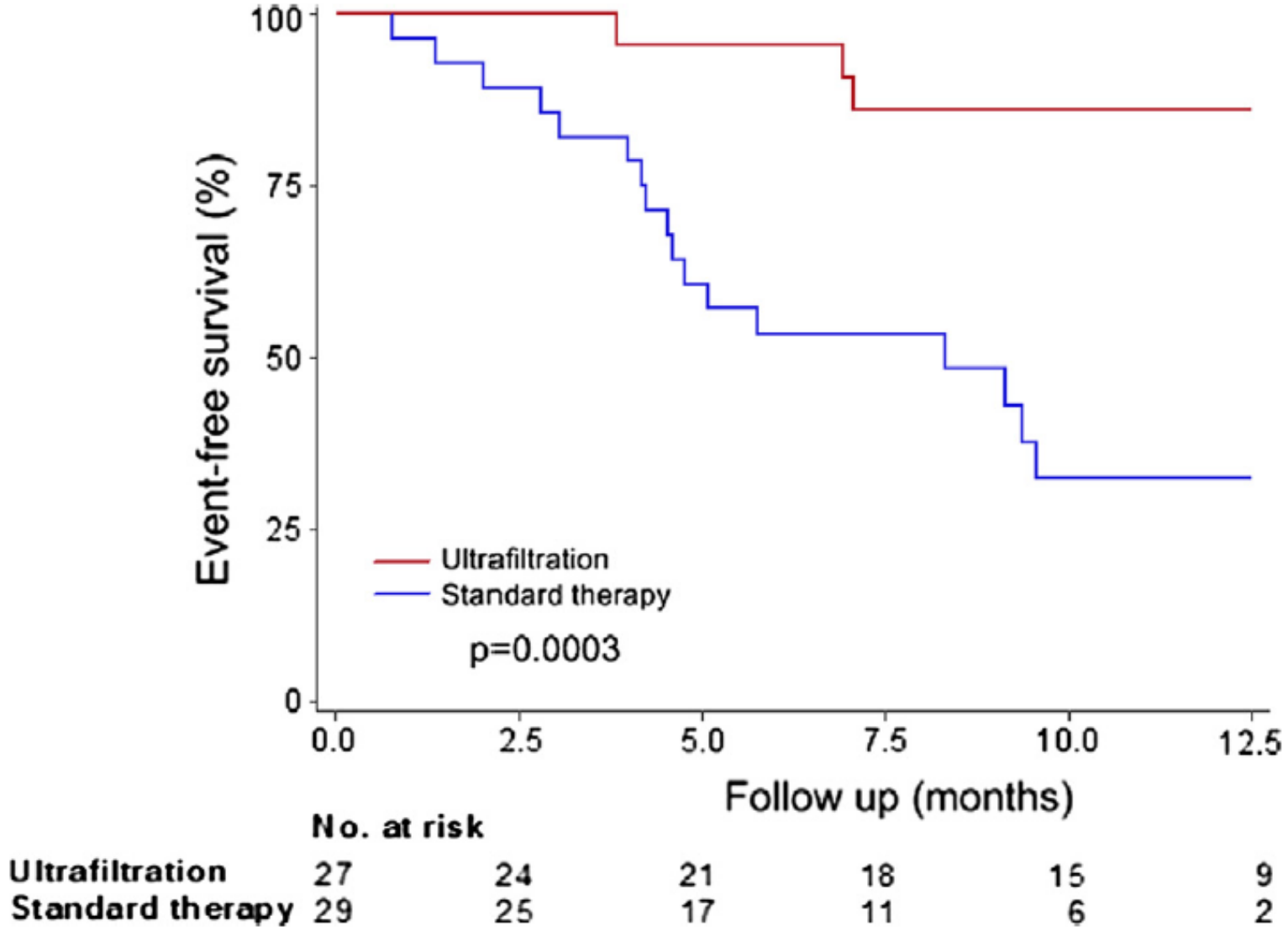


Fig. 2. Freedom from rehospitalization for congestive heart failure at 1 year in patients treated with ultrafiltration or standard therapy.

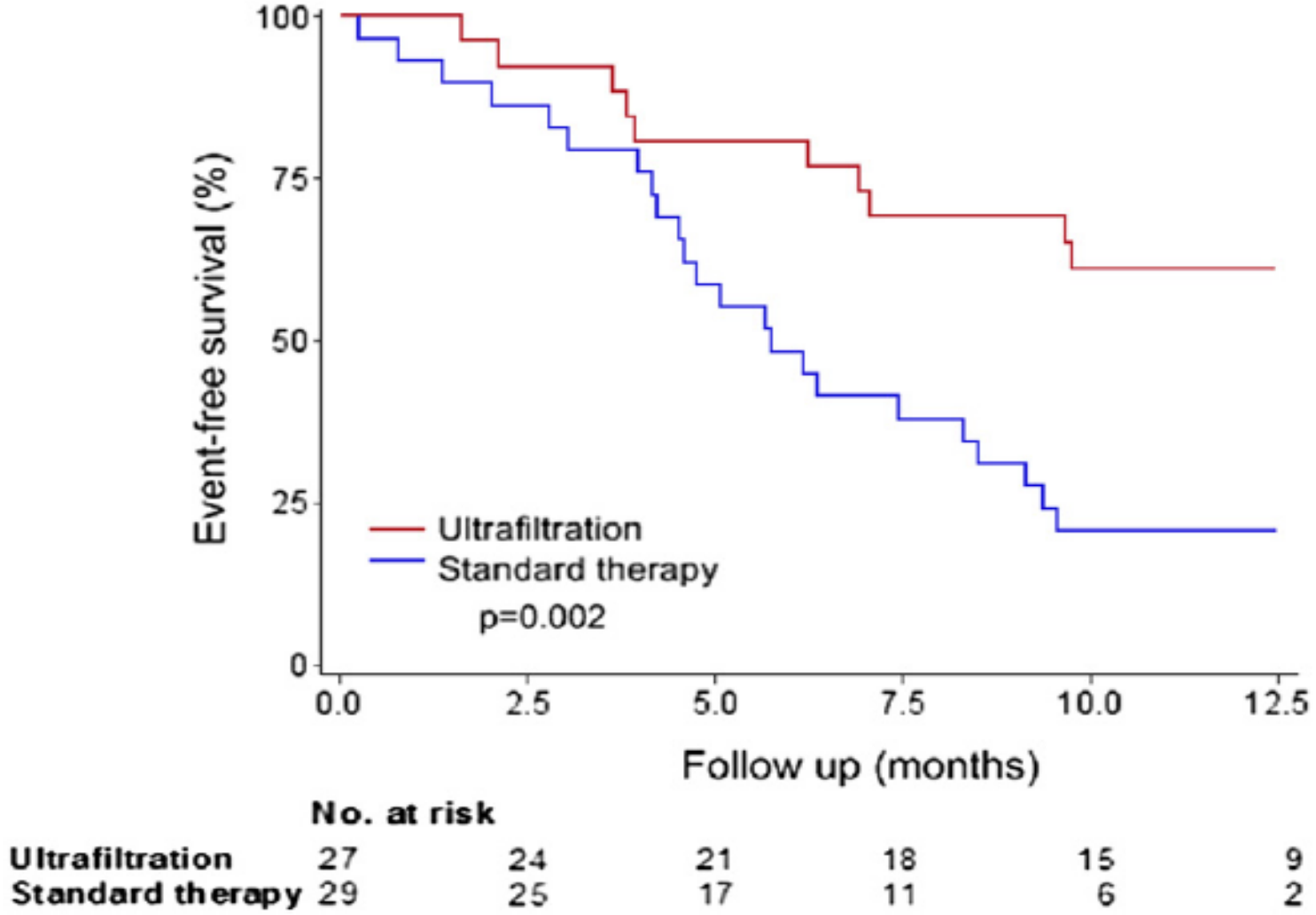
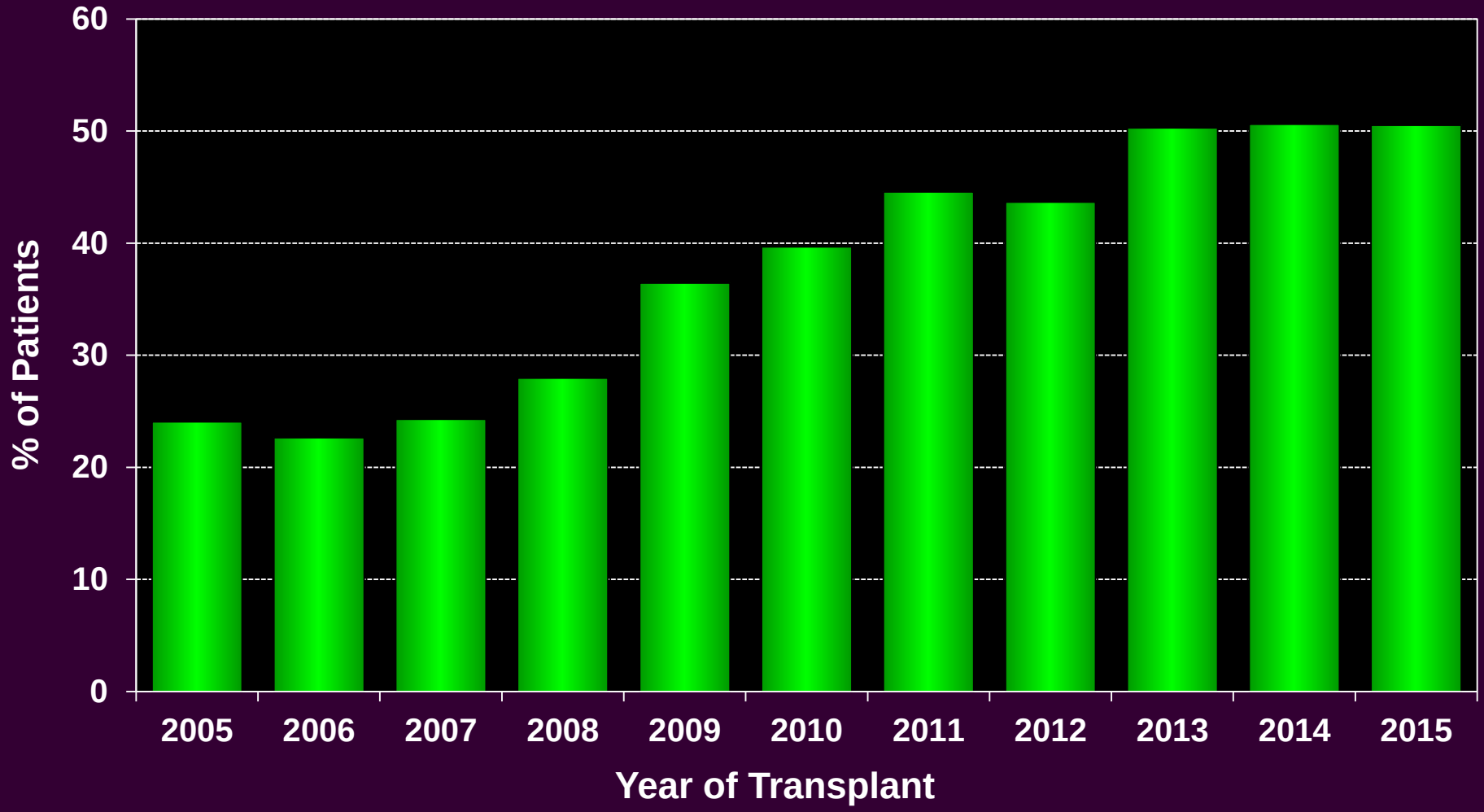


Fig. 3. Freedom from the combined end point of rehospitalization for congestive heart failure and death at 1 year in patients treated with ultrafiltration or standard therapy.

Adult Heart Transplants

% of Patients Bridged with Mechanical Circulatory Support*

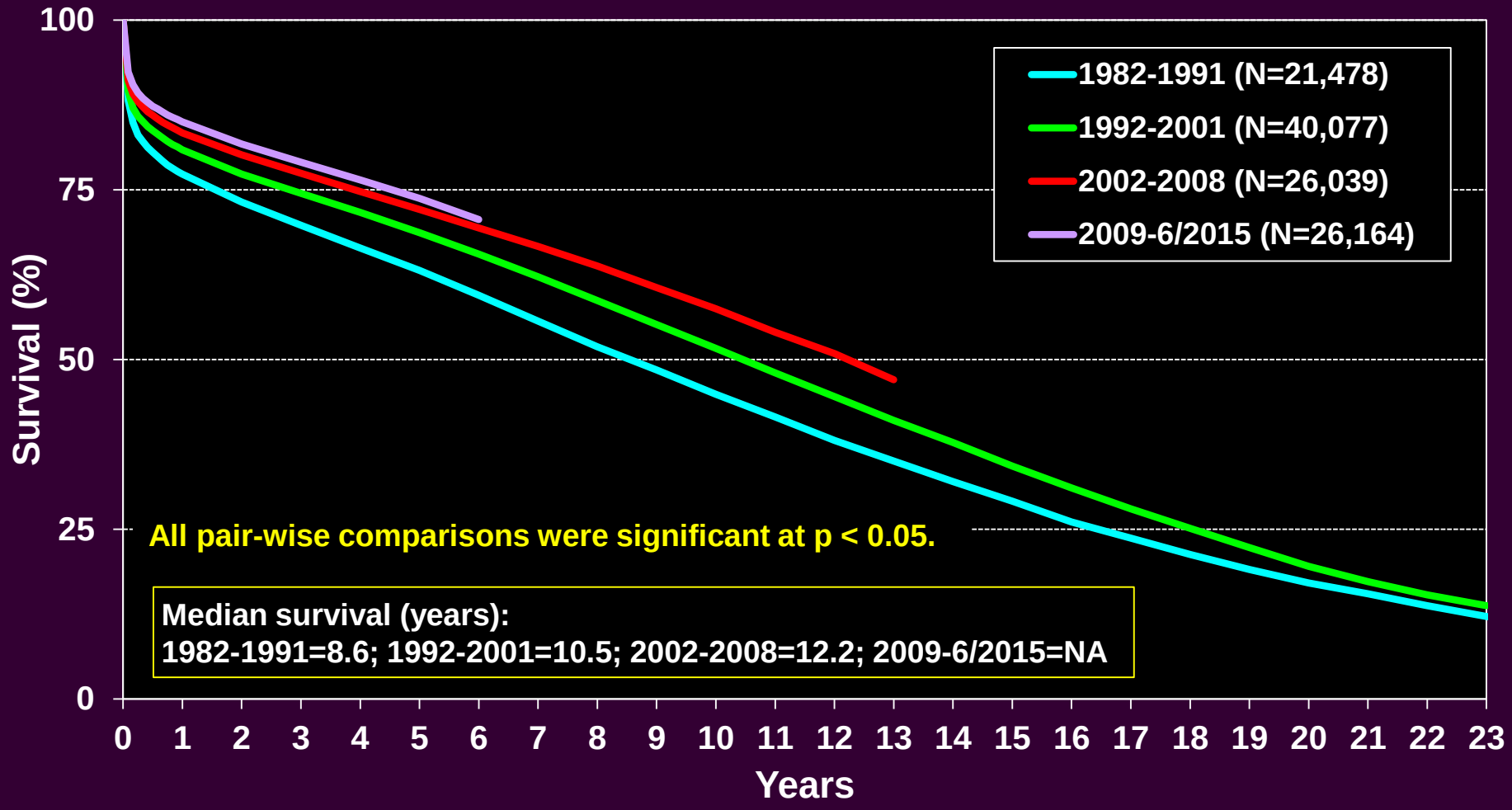
(Transplants: January 2005 – December 2015)



ISHLT • INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION
2017
JHLT. 2017 Oct; 36(10): 1037-1079

* LVAD, RVAD, TAH, ECMO

Adult Heart Transplants
Kaplan-Meier Survival by Era
(Transplants: January 1982 – June 2015)



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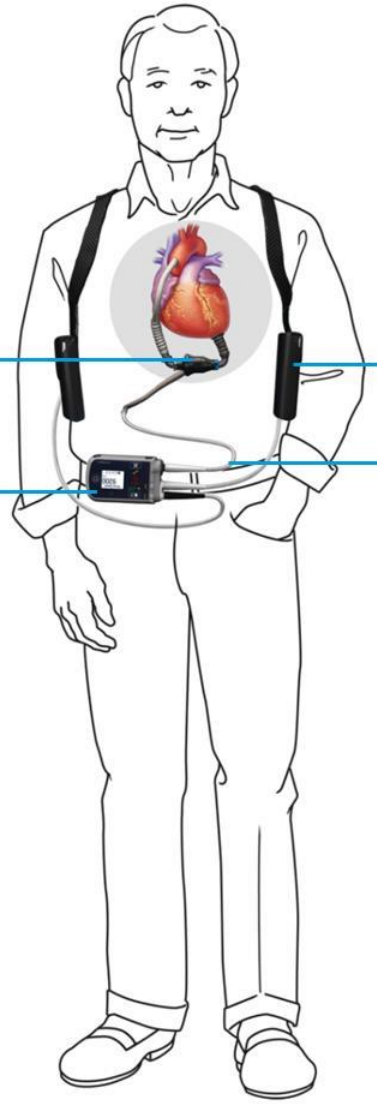
HeartMate II™ LVAD system overview

HeartMate II LVAD

- Surgically implanted, continuous-flow rotary system
- Indicated for patients in NYHA Class IIIB and IV and clinically proven for both short and long-term support.

Pocket controller

- Small and light enough to fit in a pocket
- Built-in backup battery, onboard driveline diagnostics and intuitive user interface enhance patient safety.



Light, long-lasting batteries

- Rechargeable 1-lb batteries deliver up to 12 hours of uninterrupted support on a single charge.

Durable, percutaneous driveline

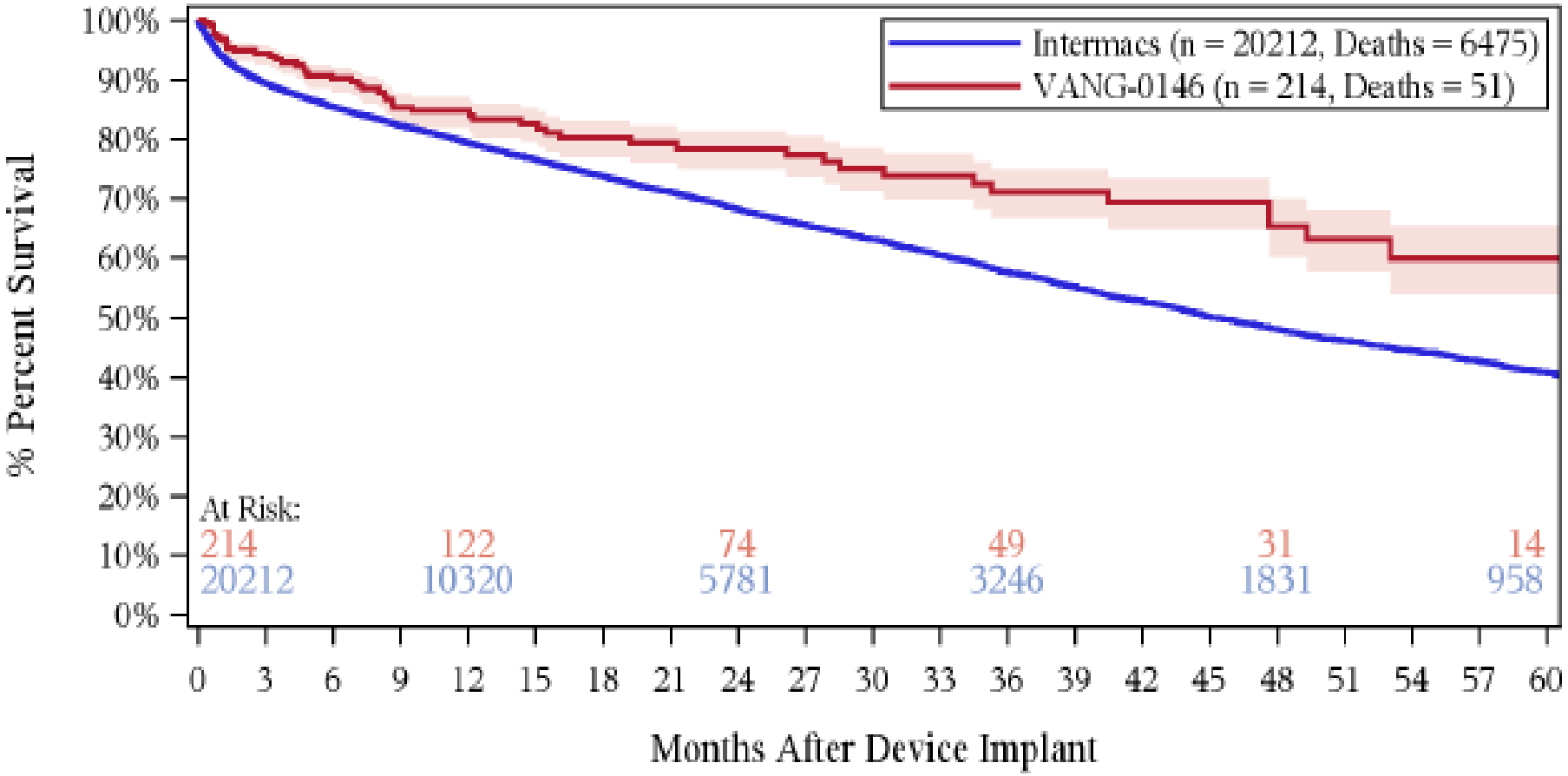
- Sends power and operating signals to the LVAD
- Enables alternative tunneling techniques that may reduce the risk of driveline infection

Mobile Power Unit

- Lightweight, discreet and highly portable
- Provides power while patient is not active

Post Implant Survival: PRIMARY OVERALL

Primary Prospective Implants: June 23, 2006 to June 30, 2017



Note: These results reflect unadjusted survival estimates. Observed differences may be due to patient selection, device selection, clinical care and/or other factors.

Shaded areas indicate 70% confidence limits

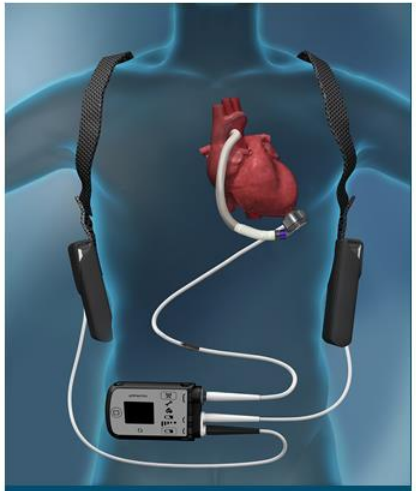
p (log-rank) = 0.0014

Event: Death (censored at transplant or recovery)

Intermacs

HeartMate 3™ LVAD with Full MagLev™ Flow Technology

A BETTER EXPERIENCE FOR CLINICIANS AND PATIENTS



Designed for intrapericardial placement

Features a thin, mechanical apical cuff lock for quick and easy pump attachment

Incorporates a modular driveline that facilitates simple replacement of externalized portion

Offers up to 17 hours of battery life for greater patient confidence and convenience