

XI Reunión. Estado del Arte en
INSUFICIENCIA CARDIACA

PRÁCTICA CLÍNICA Y MODELOS ORGANIZATIVOS

Sede: Hotel Meliá MaríaPita, A Coruña

A CORUÑA 27-28 SEPTIEMBRE 2024



XI Meeting. State of the Art in
HEART FAILURE

CLINICAL PRACTICE AND ORGANIZATIONAL MODELS

Venue: Hotel Meliá MaríaPita, A Coruña

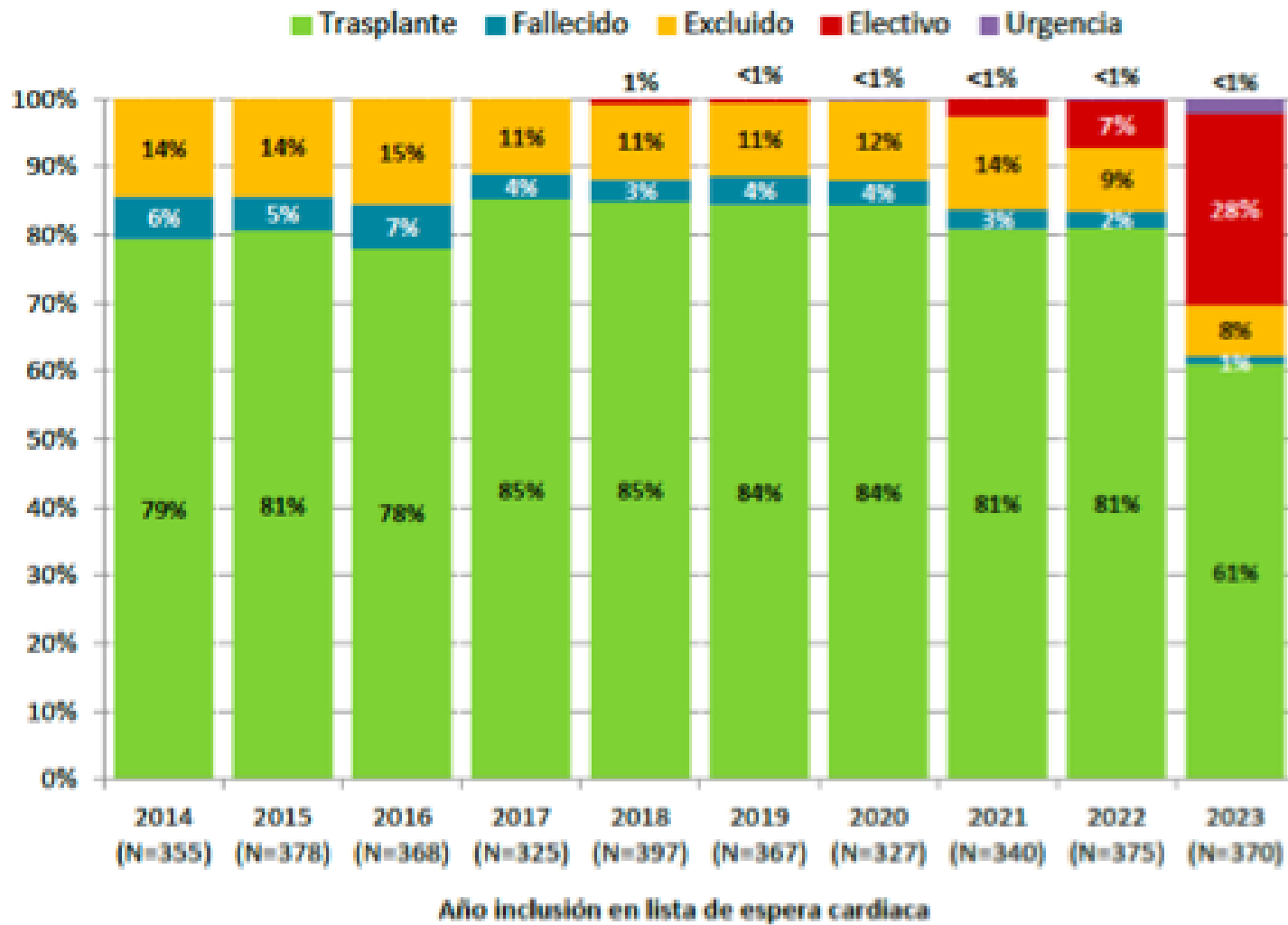
#ACoruñaHF2024

A CORUÑA 27-28 SEPTEMBER 2024

Prioritization criteria for heart transplantation

Eduardo Barge Caballero
Cardiology Department. CHUAC.
Assistant Professor. USC.
Researcher. CIBERCV.
President. SOGACAR.

Waitlist mortality or delisting is not infrequent



~15% candidates die or are delisted (usually due to clinical deterioration)

Source: Spanish National Transplant Organization www.onf.es

Urgent HTx in Spain

Less
urgent

Elective status (“Non-priority”)

Standard distribution of donors within the reference geographical area (5 areas)

Status 1 (“Priority”)

First suitable organ available **within the reference geographical area** (5 areas)

Status 0 (“High priority”)

First suitable organ available **within the whole nation**

More
urgent



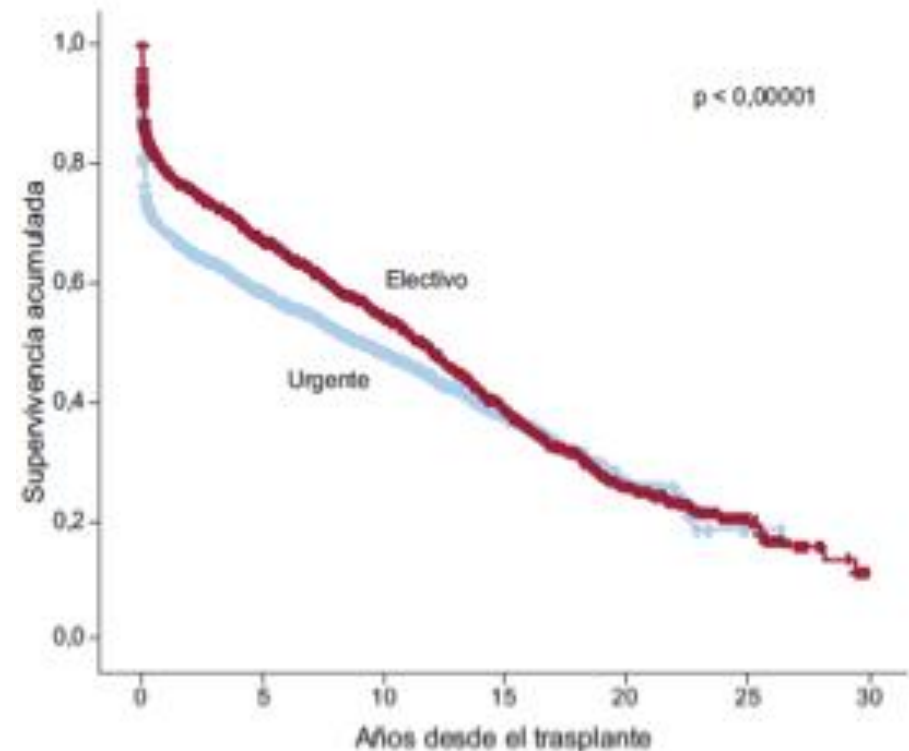
Urgent HTx in Spain: Historical results

% Donor hearts allocated to urgent candidates



Figure 4. Annual percentage of urgent transplants in the total population (2011-2020).

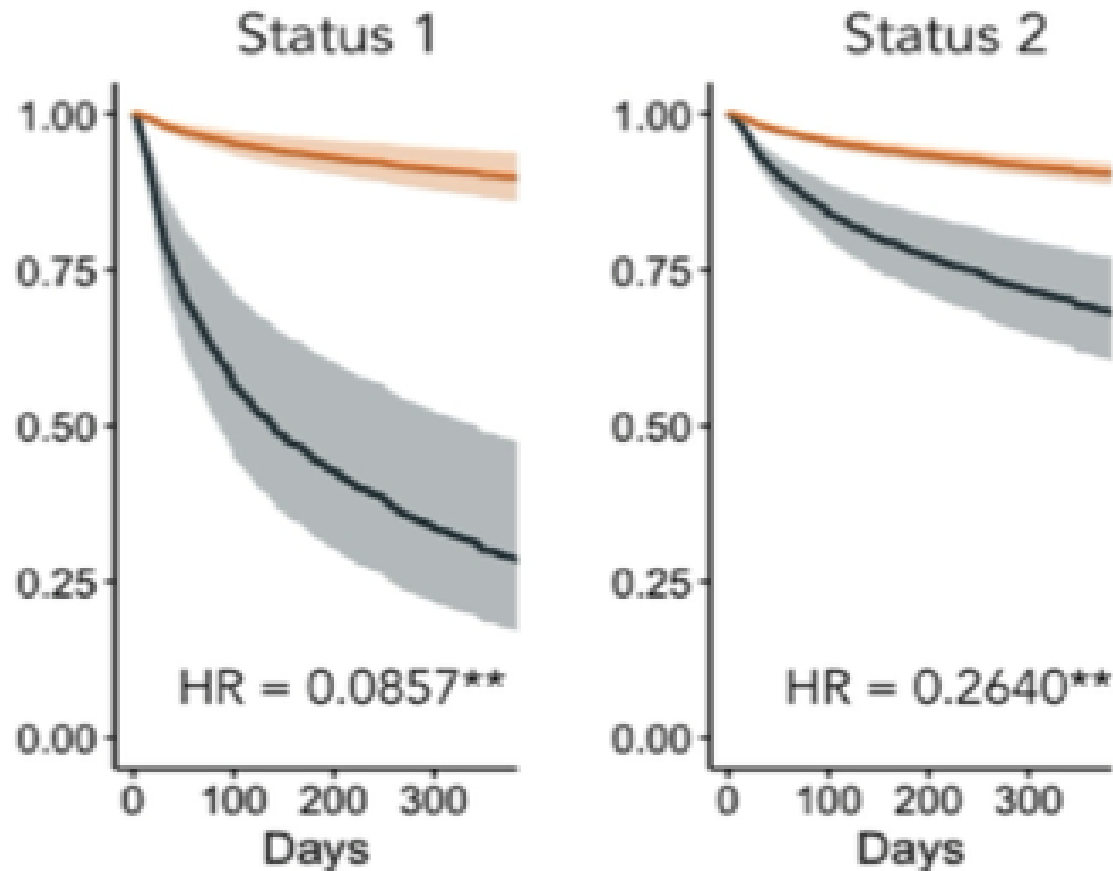
Post-HTx survival (urgent vs. elective)



Gonzalez-Vilchez F. Rev Esp Cardiol 2021.

Waitlist prioritization – is it fair?

UNOS



*Emergency waitlist status is associated to slightly higher post-HTx mortality but **substantially higher survival benefit***

Toimie S. Presented at ISHLT Meeting 2022.

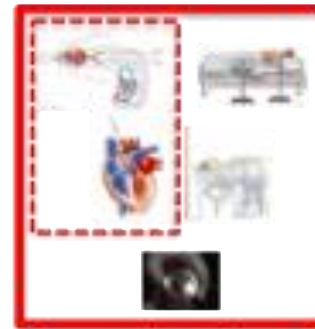
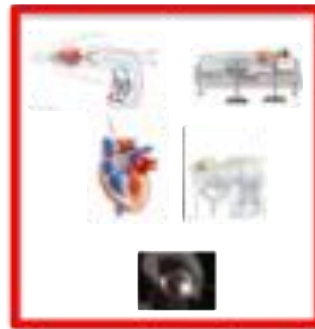
Waitlist prioritization – the Spanish model (pre-2023)

2010

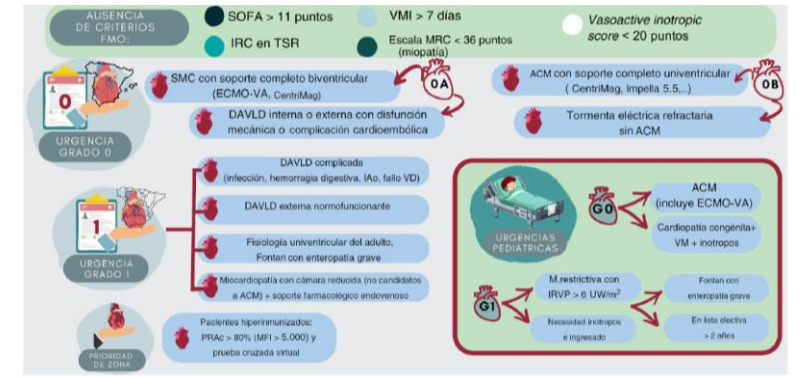
2014

2017

2023



- Urgencia Grado 0
- Urgencia Grado 0 (7–10 días)
- Urgencia Grado 1 (Nac)
- Urgencia Grado 1 (Zona)



Criteria for urgent HTx in Spain (before 2023)

Status 0 (“High priority”)

First suitable organ available within the whole nation



Temporary MCS*

(VA-ECMO**, Impella**, Centrimag, Abiomed)

Complicated durable LVAD

Status 1 (“Priority”)

First suitable organ available within the reference geographical area (5 areas)



IABP*

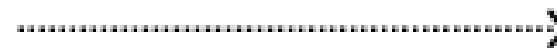
External durable VAD

(Excor)

Exceptions

Elective status (“Non-priority”)

Standard distribution of donors within the reference geographical area (5 areas)



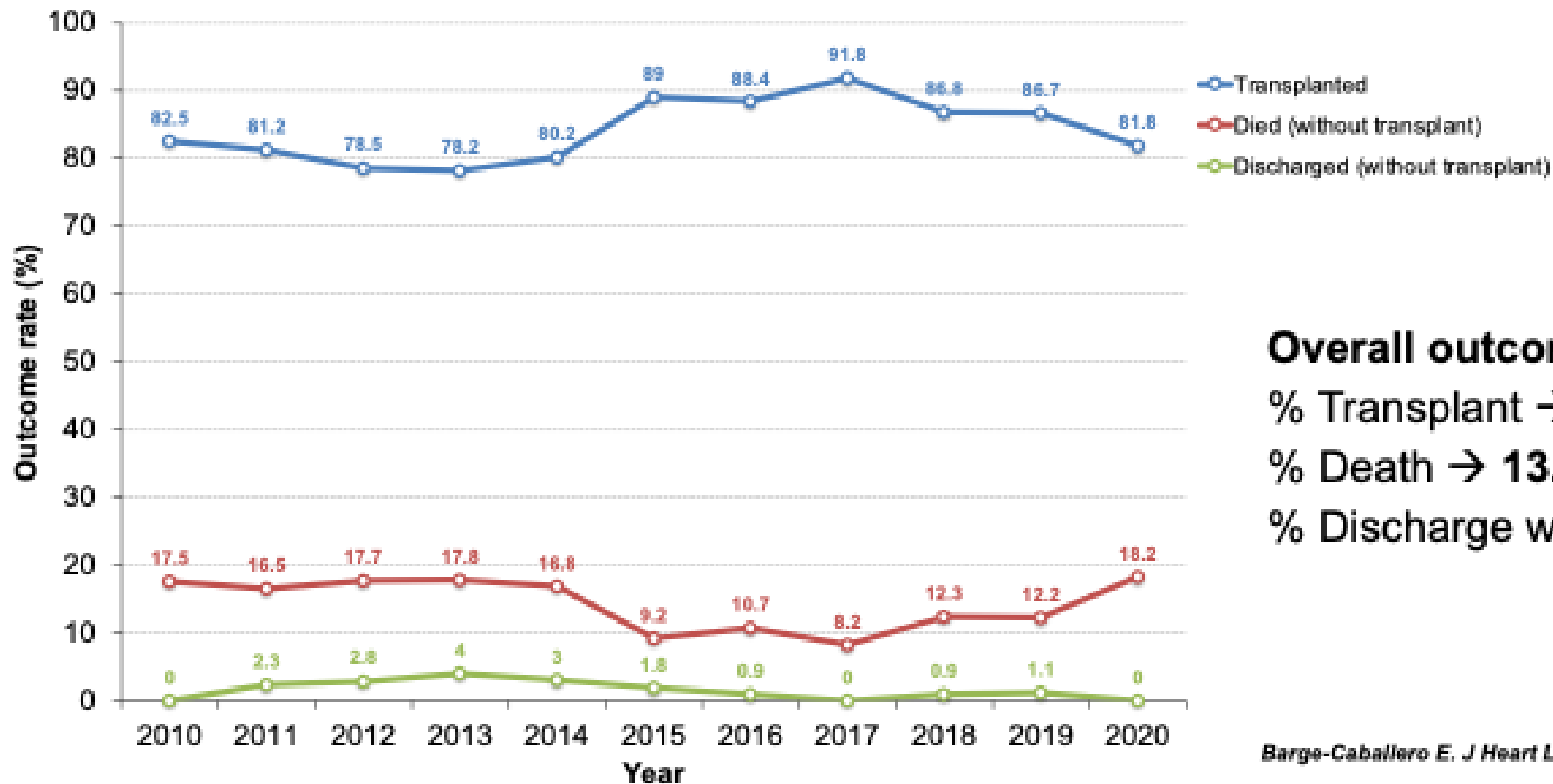
All other candidates

**Patients “must be free of MOF”, but no specific definition was used*

***Downgrade to status 1 after 7 days (10 days if extubated)*

Urgent HTx in Spain (2010 to 2020)

In-hospital outcomes after emergency transplant listing



Overall outcomes

% Transplant → **84.5%**

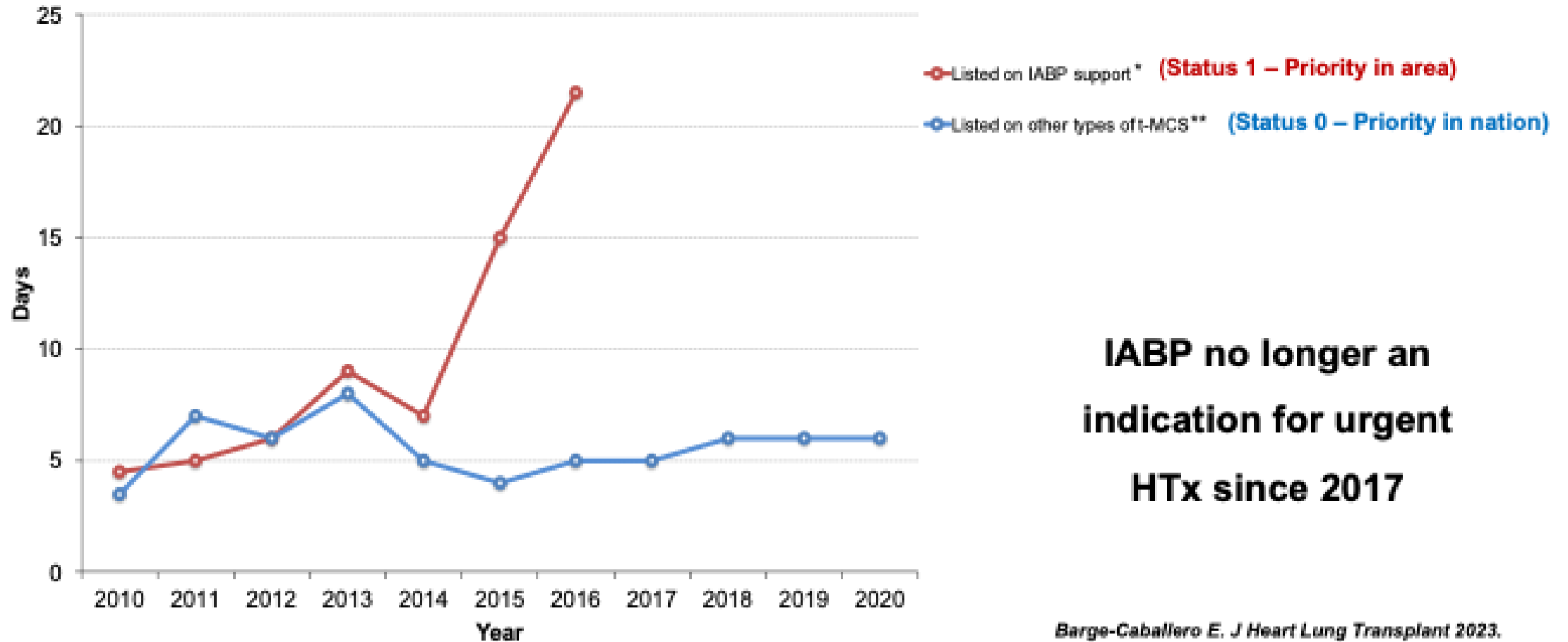
% Death → **13.9%**

% Discharge w/o HTx → **1.6%**

Barge-Caballero E. *J Heart Lung Transplant* 2023.

Urgent HTx in Spain (2010 to 2020)

Median time elapsed since emergency transplant listing to transplantation

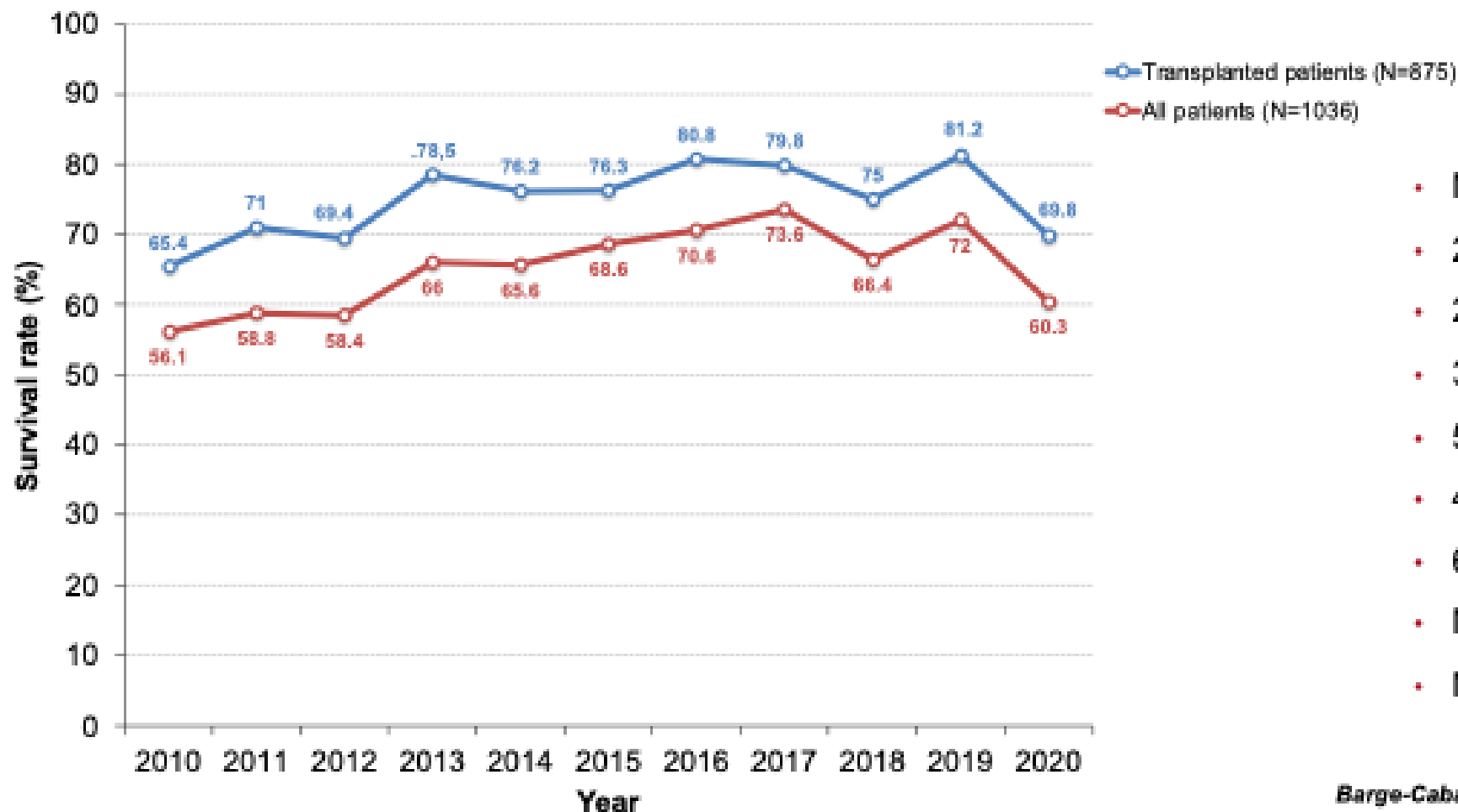


IABP no longer an indication for urgent HTx since 2017

Barge-Caballero E. J Heart Lung Transplant 2023.

Urgent HTx in Spain (2010 to 2020)

Survival 1 year after emergency transplant listing

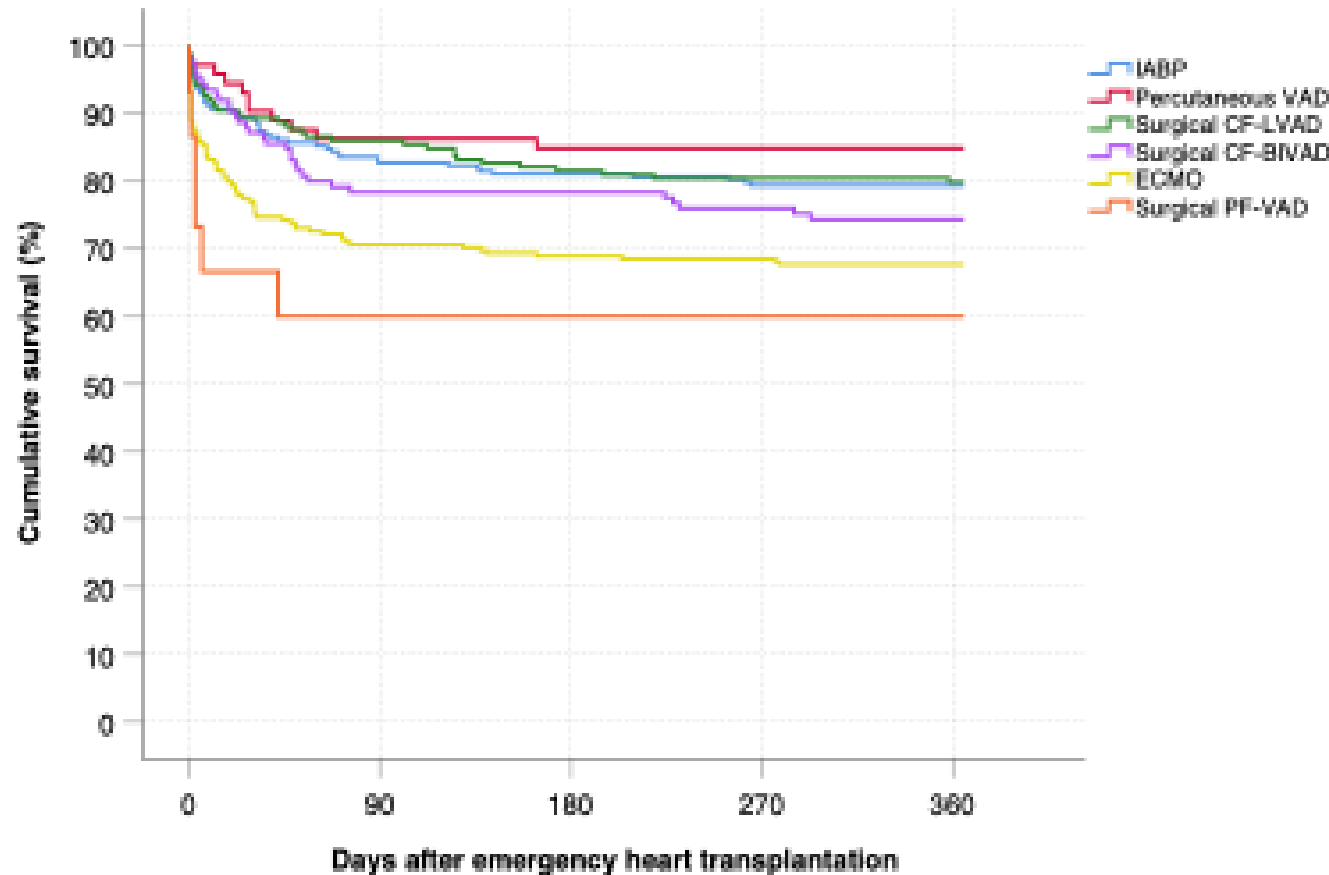


- Mean recipient age 53 years
- 22% women
- 28% acute AMI
- 30% on vassopressors
- 55% on inotropes
- 40% intubated
- 6% on dialysis
- Mean donor age 44 years
- Mean ischemic time 3.5 hours

Barge-Caballero E. *J Heart Lung Transplant* 2023.

ECMO candidates have the highest risk

Survival after urgent HTx according to the type of preoperative support



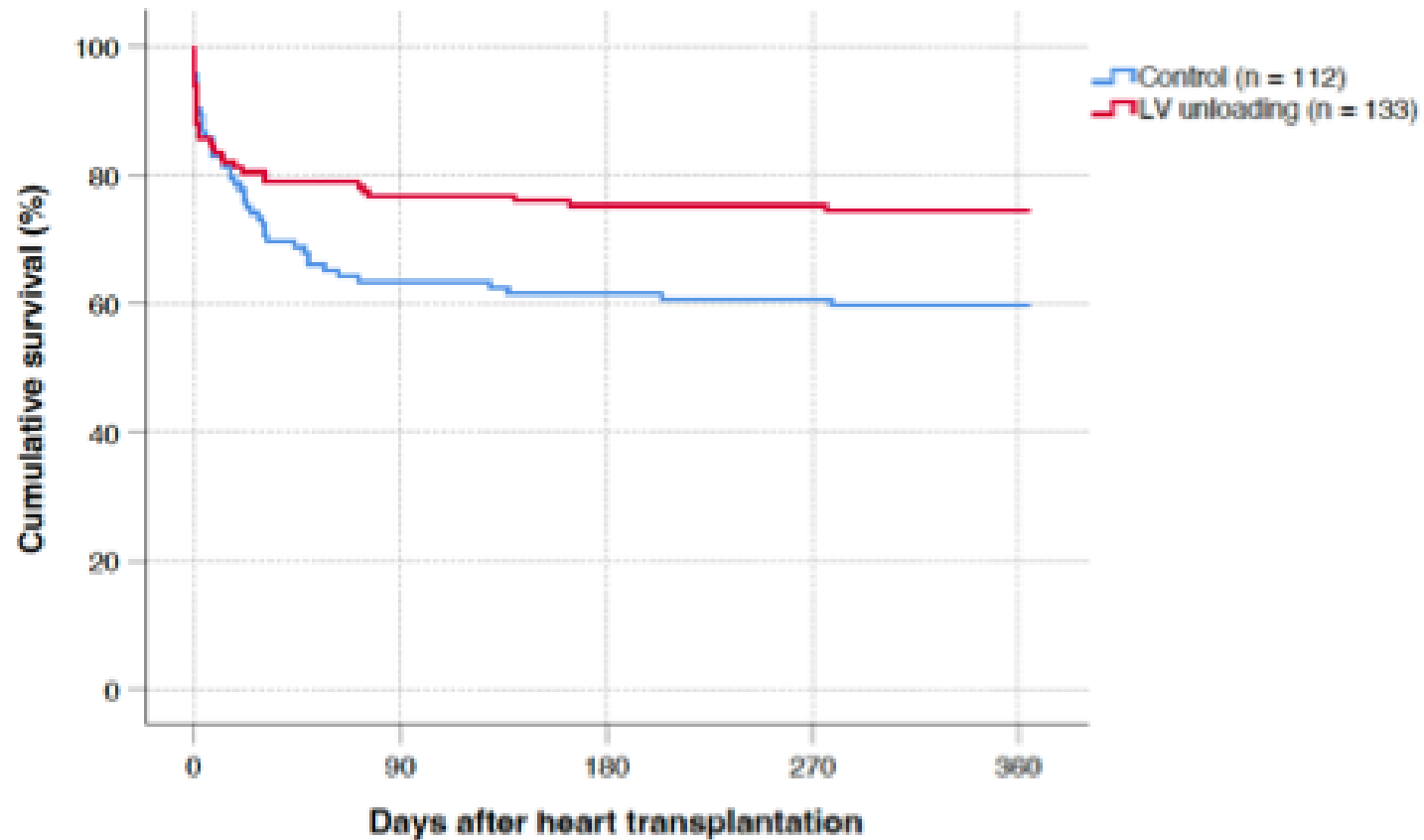
N = 875
2010-2020

HR ECMO = 1.71
(95% CI 1.15–2.73)

Barge-Caballero E. J Heart Lung Transplant 2023.

...but even in ECMO candidates, results may improve

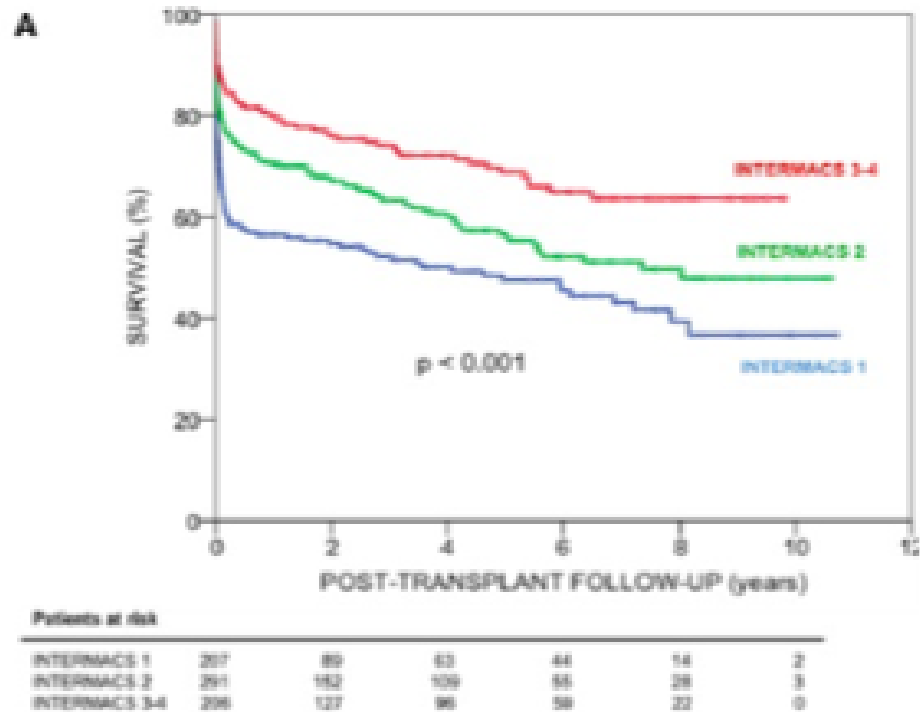
1-year post-HTx survival
(VA-ECMO alone vs. VA-ECMO + LV unloading)



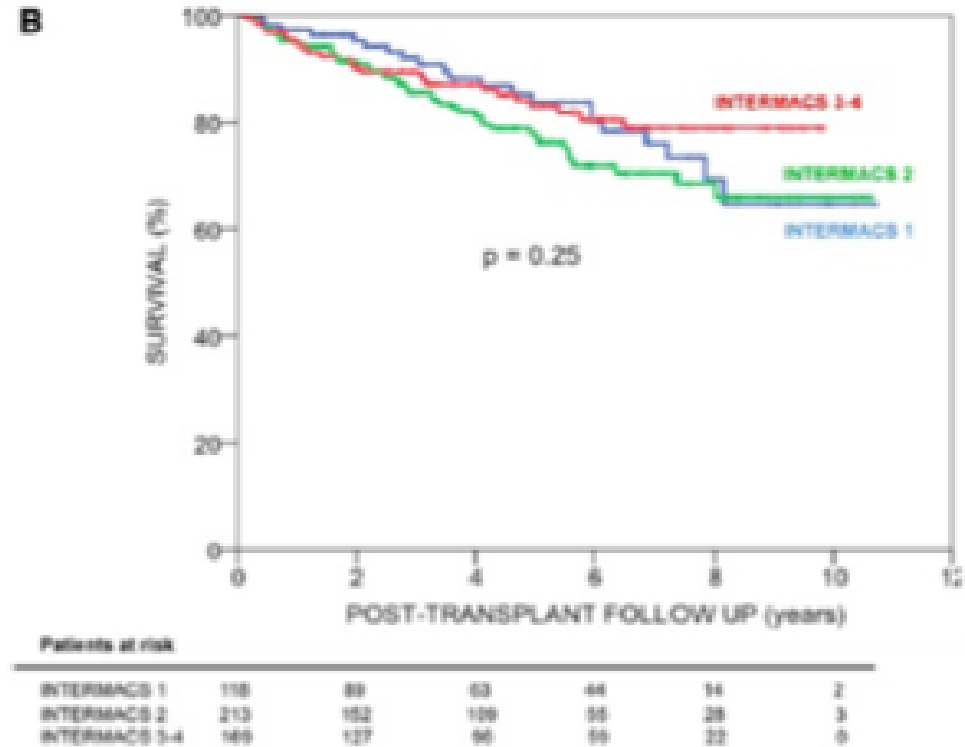
Enriquez-Vázquez D (Under review)

Urgent HTx candidates must be free of MOF

Survival after urgent HTx according to preoperative INTERMACS status



1-year conditioned survival after urgent HTx according to preoperative INTERMACS status



Barge-Caballero E. *Circ Heart Fail* 2013.

Urgent HTx candidates must be free of MOF

Table 4 Clinical predictors of 1-year all-cause mortality: univariable and multivariable Cox proportional hazards regression

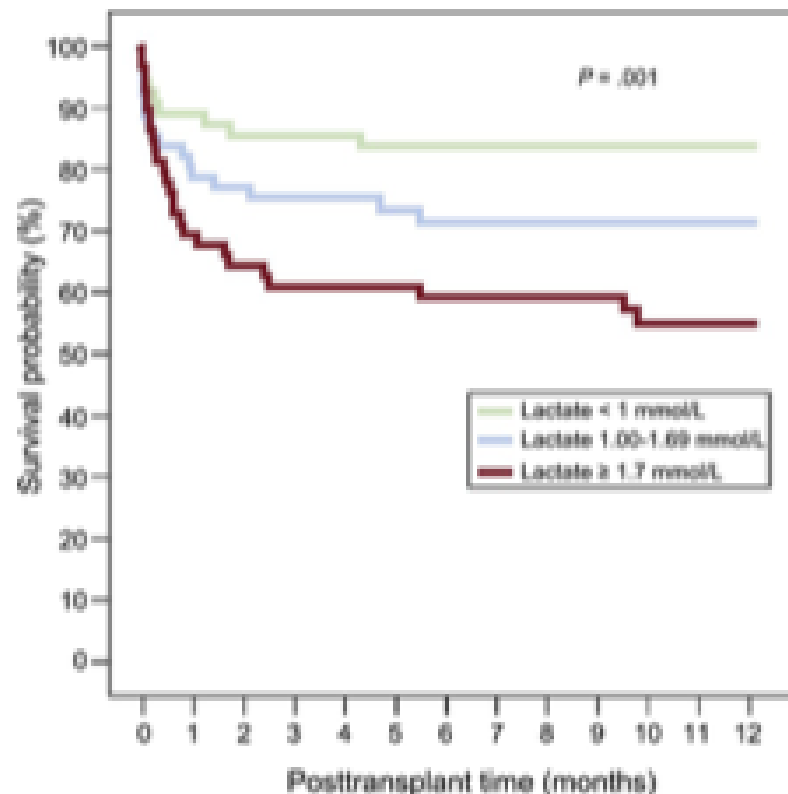
	Univariable analysis			Multivariable analysis		
	Unadjusted HR	95% CI	P-value	Adjusted HR	95% CI	P-value
Age (per 10 years)	1.21	1.03–1.42	0.023	1.29	1.06–1.56	0.010
Vasoactive-inotropic score (per 10 units)	1.03	1.06–1.09	<0.001	1.07	1.04–1.10	<0.001
Creatinine (mg/dL)	1.33	1.10–1.60	0.004	–	–	–
Lactate (mmol/L)	1.11	1.03–1.21	0.009	1.10	1.00–1.20	0.049
Renal replacement therapy	2.22	1.35–3.67	<0.001	2.02	1.06–3.84	0.032
Isolated LVAD support	0.47	0.29–0.78	0.003	0.52	0.30–0.92	0.025
Mechanical ventilation	1.67	1.12–2.49	0.012	–	–	–
Intra-aortic balloon pump	1.48	1.03–2.12	0.033	–	–	–
Active infection requiring i.v. therapy	1.74	1.08–2.02	0.023	2.13	1.20–2.79	0.010
INTERMACS profile 1	2.03	1.42–2.90	<0.001	–	–	–

CI, confidence interval; HR, hazard ratio; INTERMACS, Interagency Registry for Mechanically Assisted Circulatory Support; LVAD, left ventricular assist device.

Barge-Caballero E. *Eur J Heart Fail* 2018.

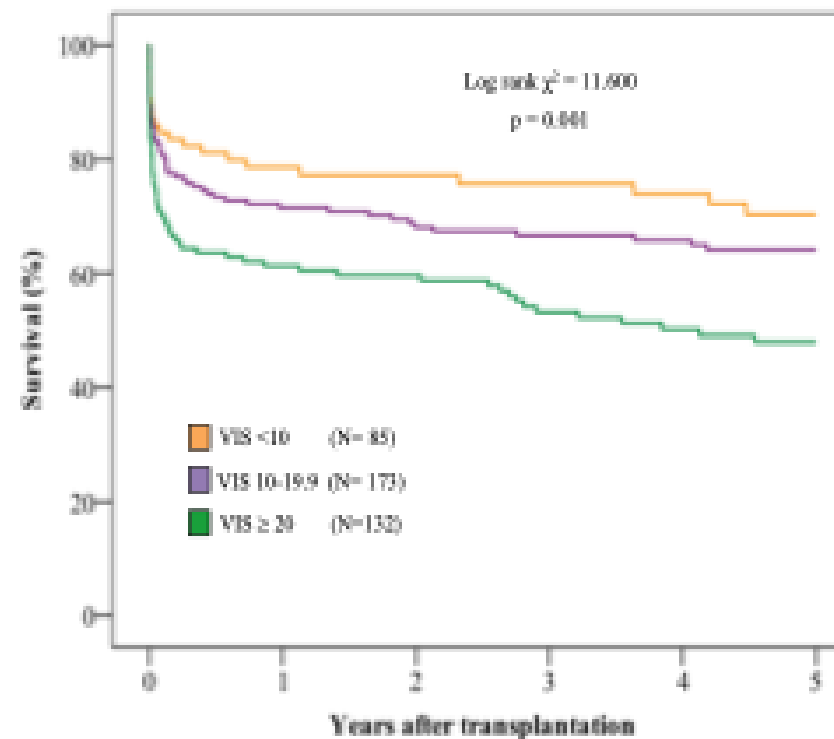
Urgent HTx candidates must be free of MOF

Survival after urgent HTx according to preoperative SERUM LACTATE



Couto D. *Rev Esp Cardiol* 2019.

Survival after urgent HTx according to preoperative VASOACTIVE-INOTROPIC SCORE



Barge-Caballero E. *Int J Cardiol* 2015.

Special article

Review of the allocation criteria for heart transplant in Spain in 2023. SEC-Heart Failure Association/ONT/SECCE consensus document



José González-Costello,^{a,b,c,d,*} Alicia Pérez-Blanco,^e Juan Delgado-Jiménez,^{d,f,g,h}
Francisco González-Vílchez,ⁱ Sonia Mirabet,^{d,j} Elena Sandoval,^{k,l} José Cuenca-Castillo,^m
Manuela Camino,ⁿ Javier Segovia-Cubero,^{d,o,p} José Carlos Sánchez-Salado,^{a,b} Enrique Pérez de la Sota,^q
Luis Almenar-Bonet,^{d,r} Marta Farrero,^{c,i,s} Eduardo Zatarain,^{d,t,u} María Dolores García-Cosío,^{d,f,g}
Iris Garrido,^v Eduardo Barge-Caballero,^{w,x,y} Manuel Gómez-Bueno,^{d,o,p} Javier de Juan Bagudá,^{d,f,g}
Nicolás Manito-Lorite,^{a,b} Amador López-Granados,^z Luis García-Guereta,^{aa} Teresa Blasco-Peiró,^{ab}
José Aurelio Sarralde-Aguayo,^{ac} Manuel Sobrino-Márquez,^{ad} Luis de la Fuente-Galán,^{d,ae}
María Generosa Crespo-Leiro,^{w,x,y} Elisabeth Coll,^e Ferrán Gran-Ipiña,^{af} Beatriz Díaz-Molina,^{ag}
Lucía Doñate,^{ah} José María Arribas-Leal,^{ai} Félix Sánchez-Vicario,^e Felipe Atienza,^{d,t,u}
Gregorio Rábago Juan-Aracil,^{aj} Antonio García-Quintana,^{ak} Itziar Martínez-Alpuente,^e
Fernando Riesgo-Gil,^{al} Jaime Hernández-Montfort,^{am} Eva Oliver-Juan,^{c,an} Javier Sánchez-Rivas,^{e,ao}
María Padilla-Martínez,^e José Miguel Pérez-Villares,^{ae} Eduardo Miñambres,^{ap} and
Beatriz Domínguez-Gil^e

New 2023 allocation criteria for heart transplant in Spain. SEC/ONT/SECCE consensus document

ABSENCE
OF MOF CRITERIA:

● SOFA > 11 points

● IMV > 7 days

● CKD in RRT

● MRC score < 36 points (myopathy)

● Vasoactive inotropic
score > 20 points



URGENCY
STATUS 0



MCS with total biventricular support
(VA-ECMO, CentriMag)



Implanted or external dVAD with mechanical
dysfunction or cardioembolic complication



MCS with total univentricular support
(eg, CentriMag, Impella 5.5)



Refractory arrhythmic storm
without MCS



URGENCY
STATUS 1



Complicated dVAD

(infection, gastrointestinal bleeding, AR, RV failure)



Properly functioning external dVAD



Adult univentricular physiology,
Fontan circulation with severe enteropathy



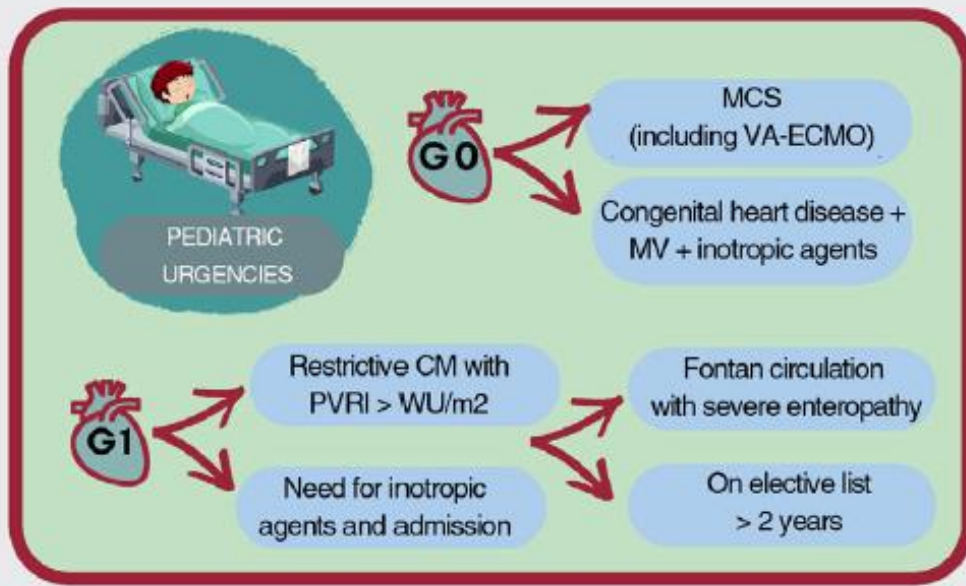
Hypertrophic or restrictive cardiomyopathy (not
candidate for MCS) + intravenous drug support



REGIONAL
PRIORITY



Hyperimmunized patients:
cPRA > 80% (MFI > 5000)
and virtual crossmatch



Conclusions

- HTx in patients on t-MCS requires prioritization.
- Distribution criteria are dynamic and change over time.
- Urgent HTx mortality is higher than in elective cases.
- Urgent HTx candidates have the higher survival benefit.
- MOF should be excluded before urgent listing.
- New 2023 Spanish allocation policy based on evidence and experience.