SFAR le Congrès
du 22 au 24 septembre 2022
Palais des Congrès de Paris

Chirurgie Cardiovasculaire de l'Adulte

Chirurgie de l'insuffisance cardiaque

Matteo Pozzi, MD, PhD

Chirurgie Cardiovasculaire de l'Adulte
Assistance et Transplantation Cardiaque
(Chef de Service: Pr. J.F. Obadia)
Hôpital Louis Pradel - Lyon

Hospices Civils de Lyon

Lyon 1

RESHAPE
Research on Healthcare Professionals and Performance

Aucun conflit d'intérêt en rapport avec cette présentation

ÉPIDÉMIOLOGIE

Circulation

AHA STATISTICAL UPDATE

Heart Disease and Stroke Statistics—2022 Update: A Report From the American Heart Association

Connie W. Tsao, MD, MPH, FAHA, Chair; Aaron W. Aday, MD, MSc, FAHA; Zaid I. Almarzooq, MB, BCH; Alvaro Alonso, MD, PhD, FAHA; Andrea Z. Beaton, MD, MS, FAHA; Marcio S. Bittencourt, MD, PhD, MPH, FAHA; Amelia K. Boehme, PhD, MSPH; Alfred E. Buxton, MD; April P. Carson, PhD, MSPH, FAHA; Yvonne Commodore-Mensah, PhD, MHS, RN, FAHA; Mitchell S.V. Elkind, MD, MS, FAHA; Kelly R. Evenson, PhD, MS, FAHA; Chete Eze-Nliam, MD, MPH; Jane F. Ferguson, PhD, FAHA; Giuliano Generoso, MD, PhD; Jennifer E. Ho, MD, FAHA; Rizwan Kalani, MD; Sadiya S. Khan, MD, MSc, FAHA; Brett M. Kissela, MD, MS, FAHA; Kristen L. Knutson, PhD; Deborah A. Levine, MD, MPH; Tené T. Lewis, PhD, FAHA; Junxiu Liu, PhD; Matthew Shane Loop, PhD, FAHA; Jun Ma, MD, PhD, FAHA; Michael E. Mussolino, PhD, FAHA; Sankar D. Navaneethan, MD, MS, MPH; Amanda Marma Perak, MD, MS, FAHA; Remy Poudel, MS, MPH, CPH; Mary Rezk-Hanna, PhD, FAHA; Gregory A. Roth, MD, MPH, FAHA; Emily B. Schroeder, MD, PhD, FAHA; Svati H. Shah, MD, MHS, FAHA; Evan L. Thacker, PhD; Lisa B. VanWagner, MD, MSc, FAHA; Salim S. Virani, MD, PhD, FAHA; Jenifer H. Voecks, PhD; Nae-Yuh Wang, PhD, MS, FAHA; Kristine Yaffe, MD; Seth S. Martin, MD, MHS, FAHA, Vice Chair; on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee

Background: The American Heart Association, in conjunction with the National Institutes of Health, annually reports the most up-to-date statistics related to heart disease, stroke, and cardiovascular risk factors, including core health behaviors (smoking, physical activity, diet, and weight) and health factors (cholesterol, blood pressure, and glucose control) that contribute to cardiovascular health. The Statistical Update presents the latest data on a range of major clinical heart and circulatory disease conditions (including stroke, congenital heart disease, rhythm disorders, subclinical atherosclerosis, coronary heart disease, heart failure, valvular disease, venous disease, and peripheral artery disease) and the associated outcomes (including quality of care, procedures, and economic costs).

Methods: The American Heart Association, through its Statistics Committee, continuously monitors and evaluates sources of data on heart disease and stroke in the United States to provide the most current information available in the annual Statistical Update. The 2022 Statistical Update is the product of a full year's worth of effort by dedicated volunteer clinicians and scientists, committed government professionals, and American Heart Association staff members. This year's edition includes data on the monitoring and benefits of cardiovascular health in the population and an enhanced focus on social determinants of health, adverse pregnancy outcomes, vascular contributions to brain health, and the global burden of cardiovascular disease and healthy life expectancy.

Results: Each of the chapters in the Statistical Update focuses on a different topic related to heart disease and stroke statistics.

Conclusions: The Statistical Update represents a critical resource for the lay public, policymakers, media professionals, clinicians, health care administrators, researchers, health advocates, and others seeking the best available data on these factors and conditions.

Key Words: AHA Scientific Statements ■ cardiovascular diseases ■ epidemiology ■ risk factors ■ statistics ■ stroke

The 2022 American Heart Association (AHA) Statistical Update uses updated language surrounding race and ethnicity to honor the people belonging to each group. Instead of referring to a specific group with only the name of their race or ethnicity, we have identified each race or ethnic classification with terms such as "Asian people," "Black adults," "Hispanic youth," "White females," or similar terms.

As the AHA continues its focus on health equity to address structural racism, we are working actively to reconcile language used in previously published data sources and studies as we compile this information in the annual Statistical Update. We strive to use the racial and ethnic terms from the original data sources or published studies (mostly from the past 5 years), which may not be as inclusive as the terms now used in 2022. As style guidelines for scientific writing evolve, they will serve as guidance for data sources and publications and how they are cited in future Statistical Update publications.

Circulation is available at www.ahajournals.org/journal/circ

Circulation. 2022;145:e00–e00. DOI: 10.1161/CIR.0000000000001052 February 22, 2022 1

American Heart Association®

INSUFFISANCE CARDIAQUE

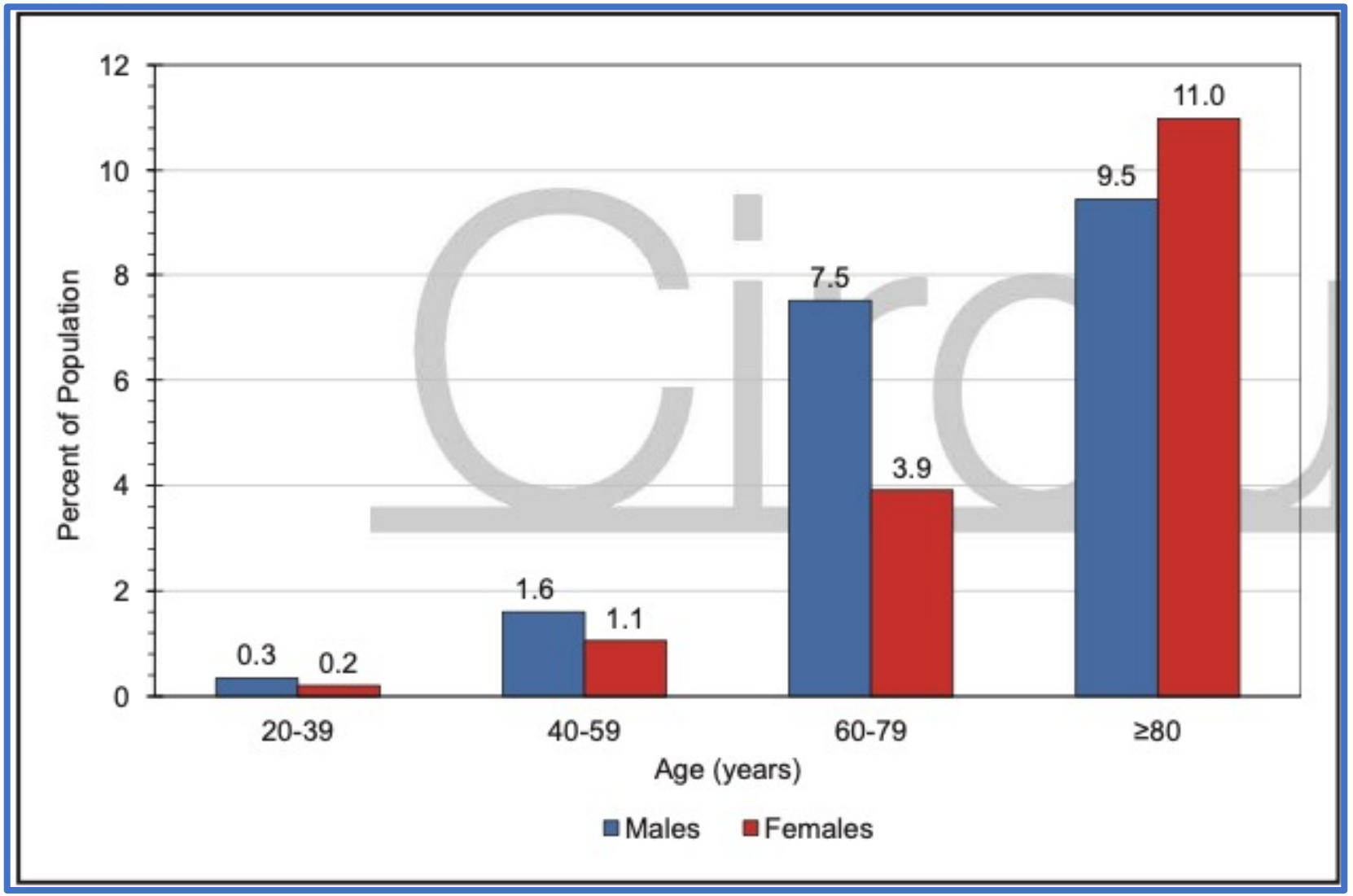
≈6 millions d'Américains ≥20 ans

Prévalence: 2.1%

Augmentation de 46% entre 2012 et 2030

Circulation 2022;145:e153-e639

ÉPIDÉMIOLOGIE



Circulation 2022;145:e153-e639

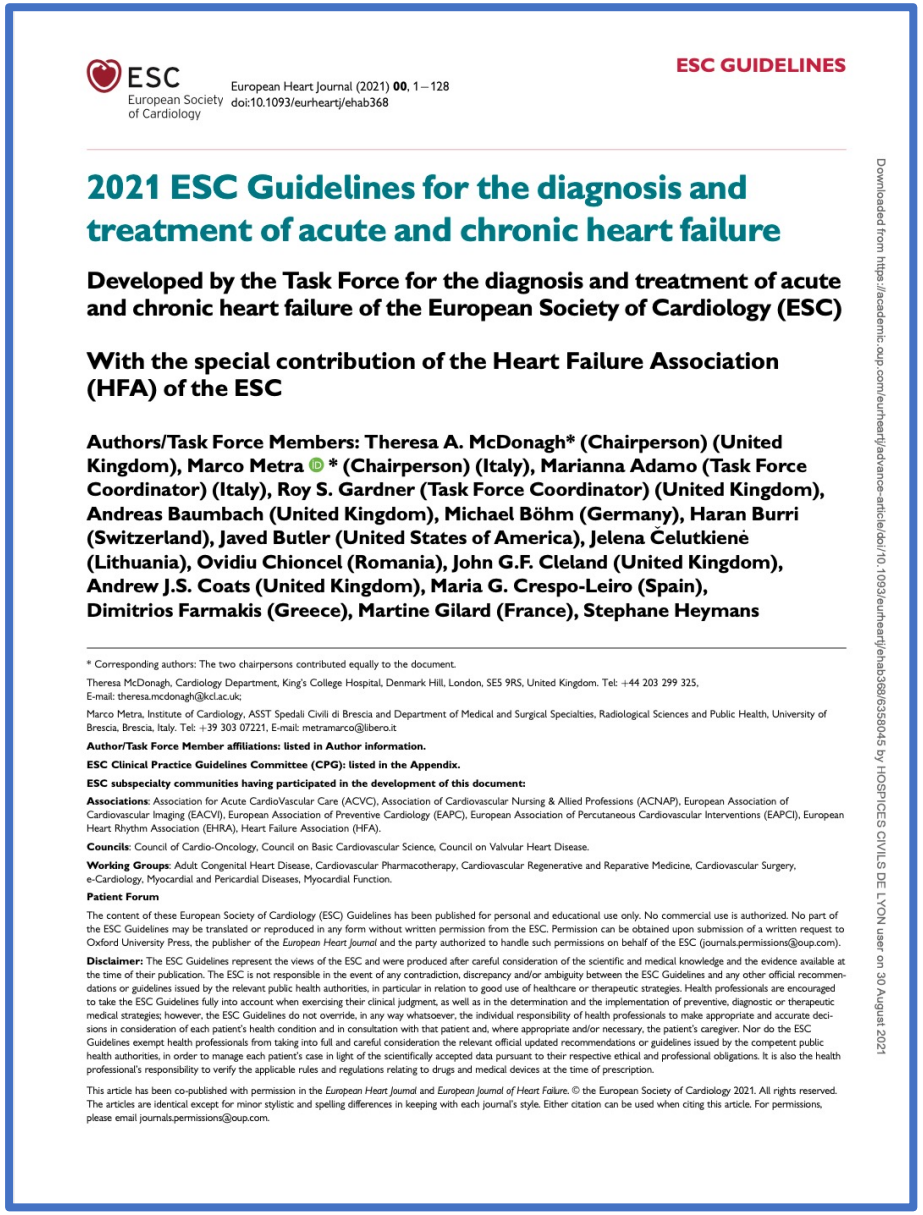
ÉPIDÉMIOLOGIE

INSUFFISANCE CARDIAQUE

Prévalence: 1% (âge <55 ans)

Prévalence: 10% (âge >70 ans)

Eur Heart J 2021;42:3599-3726



ESC European Society of Cardiology

European Heart Journal (2021) **00**, 1–128
doi:10.1093/eurheartj/ehab368

ESC GUIDELINES

2021 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure

Developed by the Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC)

With the special contribution of the Heart Failure Association (HFA) of the ESC

Authors/Task Force Members: Theresa A. McDonagh* (Chairperson) (United Kingdom), Marco Metra * (Chairperson) (Italy), Marianna Adamo (Task Force Coordinator) (Italy), Roy S. Gardner (Task Force Coordinator) (United Kingdom), Andreas Baumbach (United Kingdom), Michael Böhm (Germany), Haran Burri (Switzerland), Javed Butler (United States of America), Jelena Čelutkienė (Lithuania), Ovidiu Chioncel (Romania), John G.F. Cleland (United Kingdom), Andrew J.S. Coats (United Kingdom), Maria G. Crespo-Leiro (Spain), Dimitrios Farmakis (Greece), Martine Gilard (France), Stephane Heymans

* Corresponding authors: The two chairpersons contributed equally to the document.

Theresa McDonagh, Cardiology Department, King's College Hospital, Denmark Hill, London, SE5 9RS, United Kingdom. Tel: +44 203 299 325, E-mail: theresa.mcdonagh@kcl.ac.uk;

Marco Metra, Institute of Cardiology, ASST Spedali Civili di Brescia and Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia, Italy. Tel: +39 303 07221, E-mail: metramarco@libero.it

Author/Task Force Member affiliations: listed in Author information.

ESC Clinical Practice Guidelines Committee (CPG): listed in the Appendix.

ESC subspecialty communities having participated in the development of this document:

Associations: Association for Acute CardioVascular Care (ACVC), Association of Cardiovascular Nursing & Allied Professions (ACNAP), European Association of Cardiovascular Imaging (EACVI), European Association of Preventive Cardiology (EAPC), European Association of Percutaneous Cardiovascular Interventions (EAPCI), European Heart Rhythm Association (EHRA), Heart Failure Association (HFA).

Councils: Council of Cardio-Oncology, Council on Basic Cardiovascular Science, Council on Valvular Heart Disease.

Working Groups: Adult Congenital Heart Disease, Cardiovascular Pharmacotherapy, Cardiovascular Regenerative and Reparative Medicine, Cardiovascular Surgery, e-Cardiology, Myocardial and Pericardial Diseases, Myocardial Function.

Patient Forum

ÉPIDÉMIOLOGIE

120 000 nouveaux cas par an

70 000 décès par an

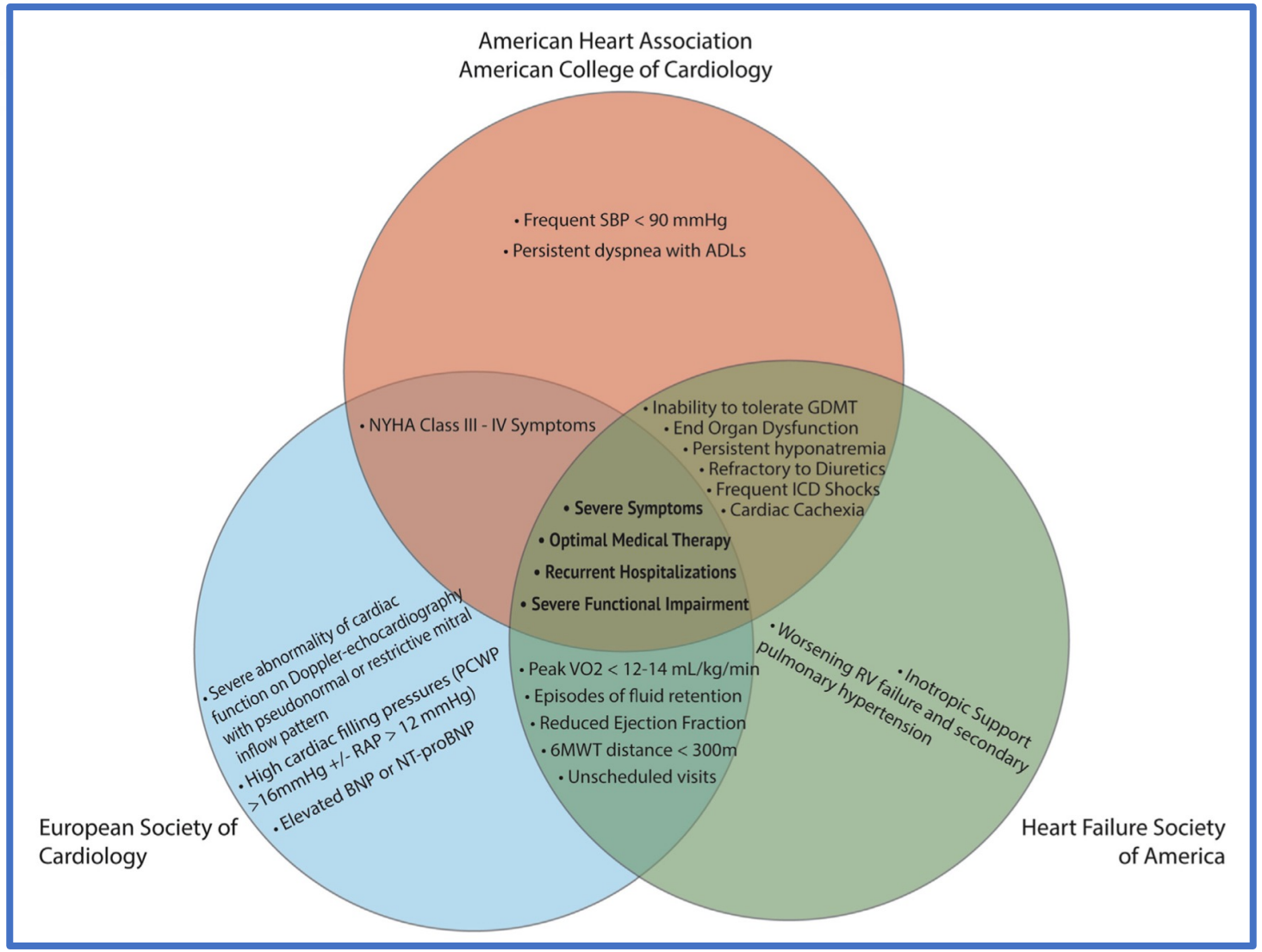
165 000 hospitalisations par an

<u>29% de mortalité à 1 an après une hospitalisation</u>

SOCIÉTÉ FRANÇAISE DE CARDIOLOGIE
GICC Groupe Insuffisance Cardiaque & Cardiomyopathies

DÉFINITION

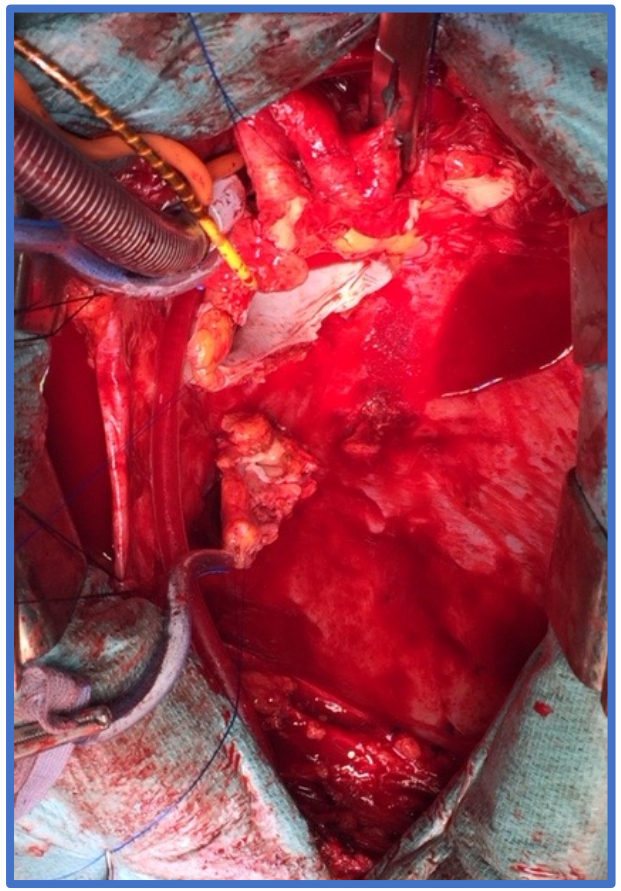
INSUFFISANCE CARDIAQUE AVANCÉE

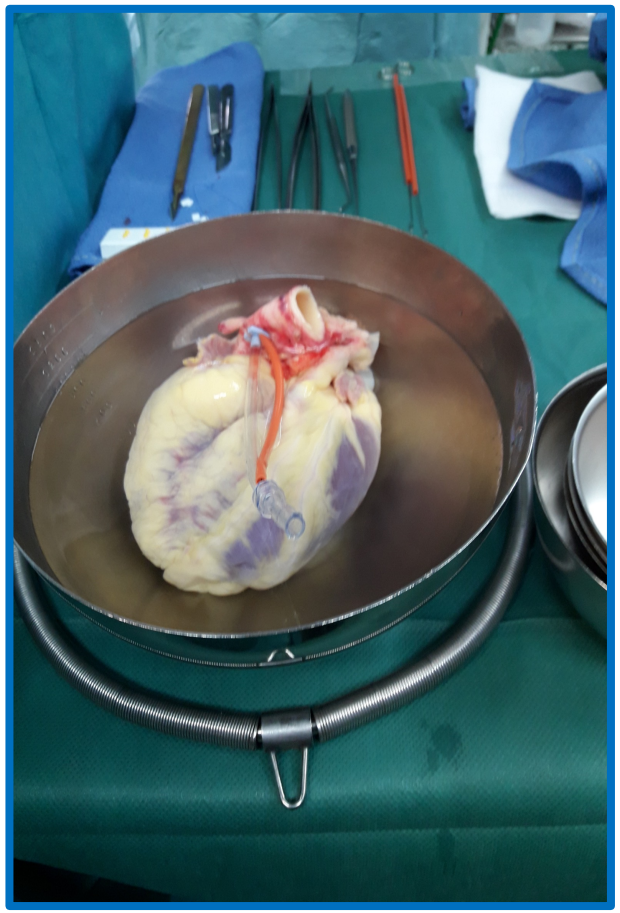


J Am Coll Cardiol HF 2020;8:523-536

TRANSPLANTATION CARDIAQUE

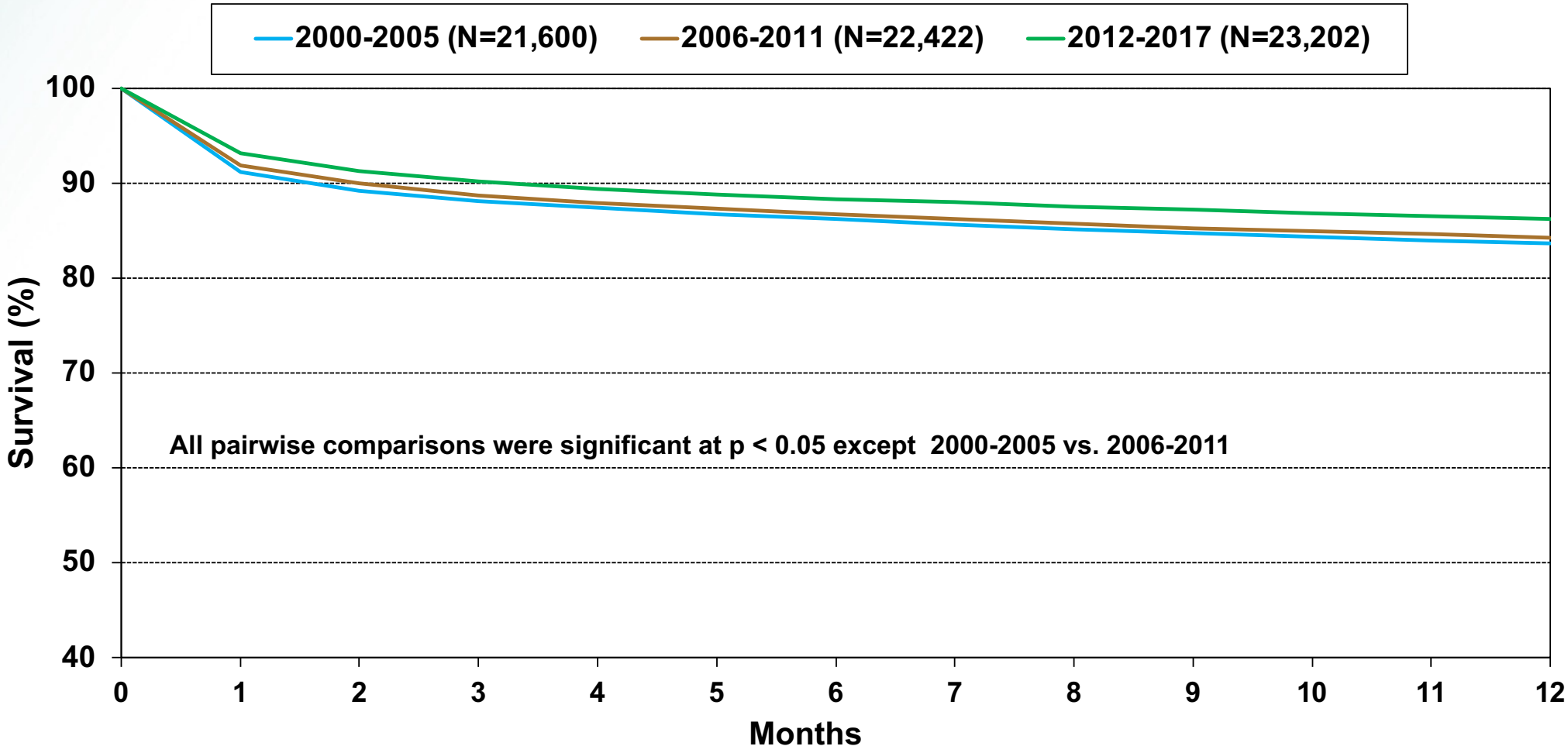
Le **traitement de référence** de l'**insuffisance cardiaque avancée** est la **transplantation cardiaque**





TRANSPLANTATION CARDIAQUE

RÉSULTATS

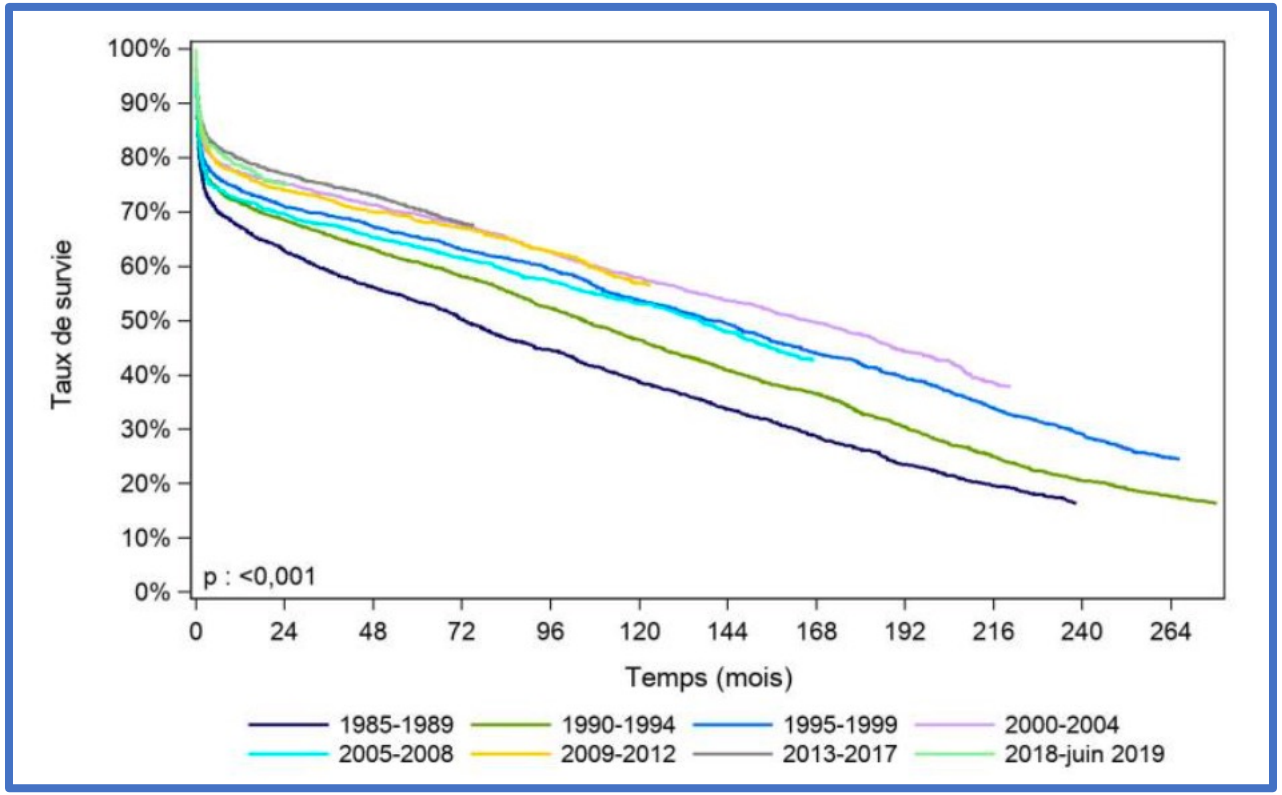


ISHLT 2021 ISHLT • INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION

J Heart Lung Transplant 2021;40:1035-1049

TRANSPLANTATION CARDIAQUE

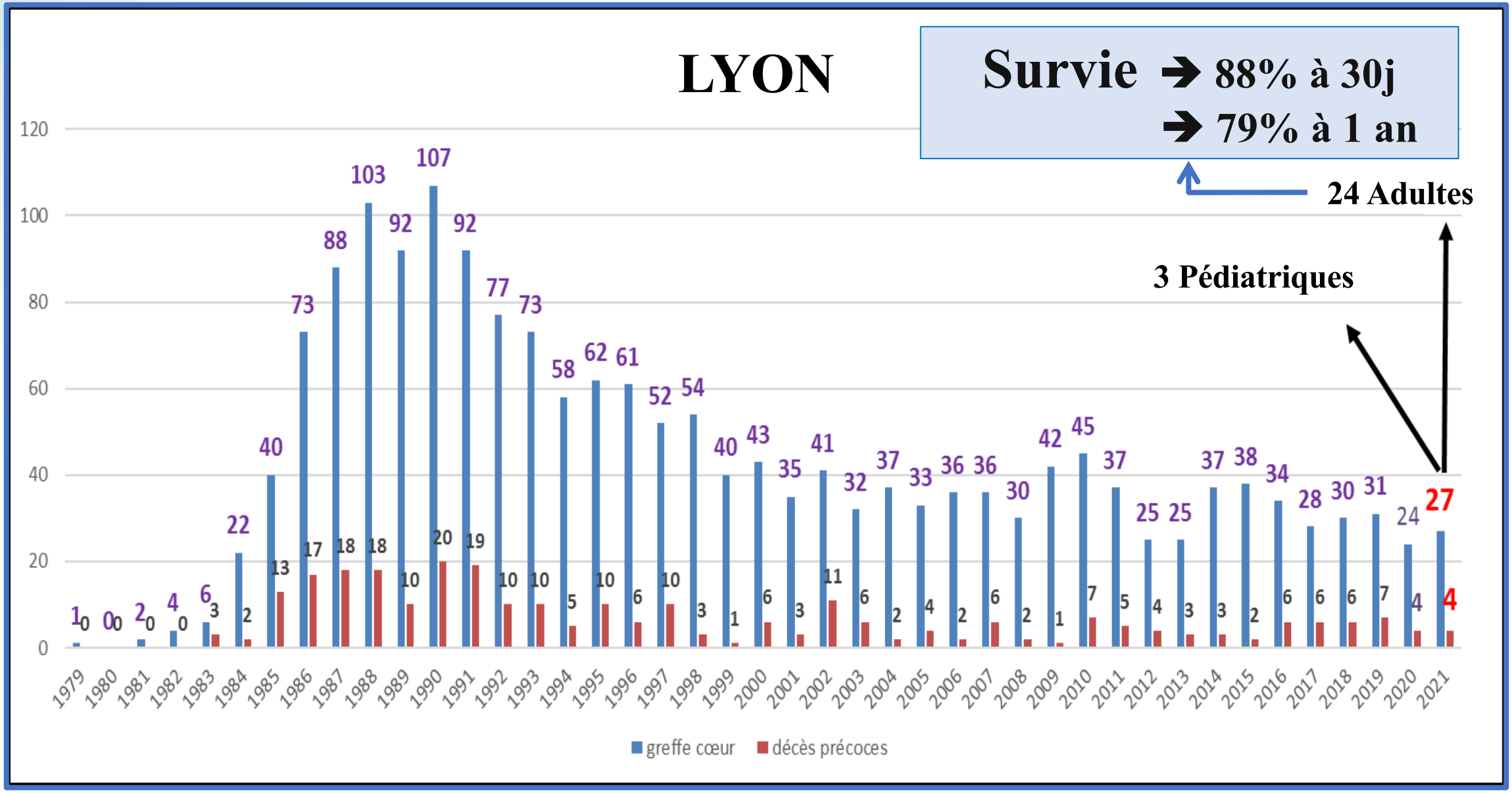
RÉSULTATS



2018-juin 2019	655	88.2% [85.5% - 90.5%]	78.7% [75.3% - 81.6%]	NO	NO	NO	NO
nombre de sujets à risque*		578	454	0	0	0	

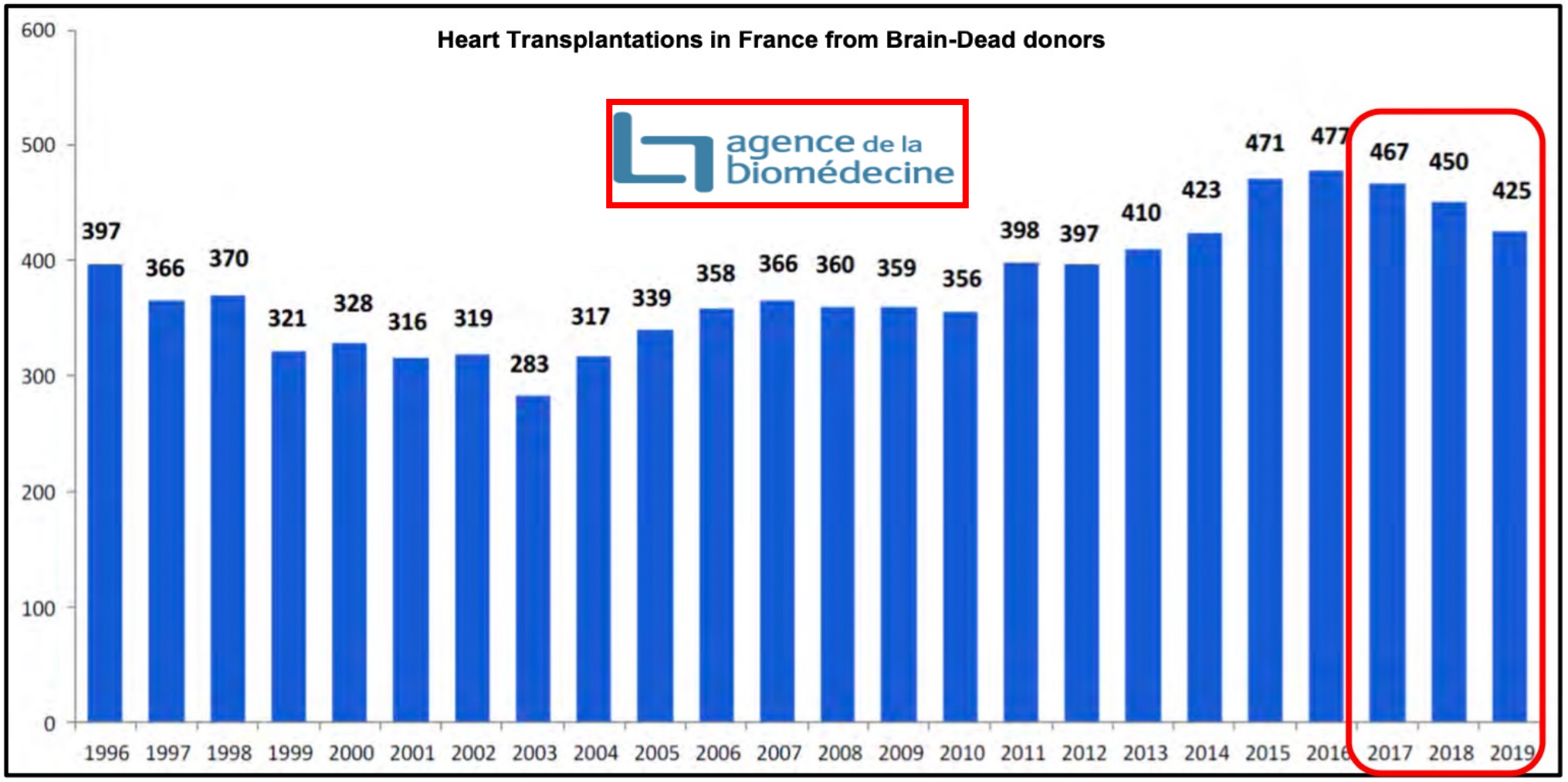
TRANSPLANTATION CARDIAQUE

RÉSULTATS



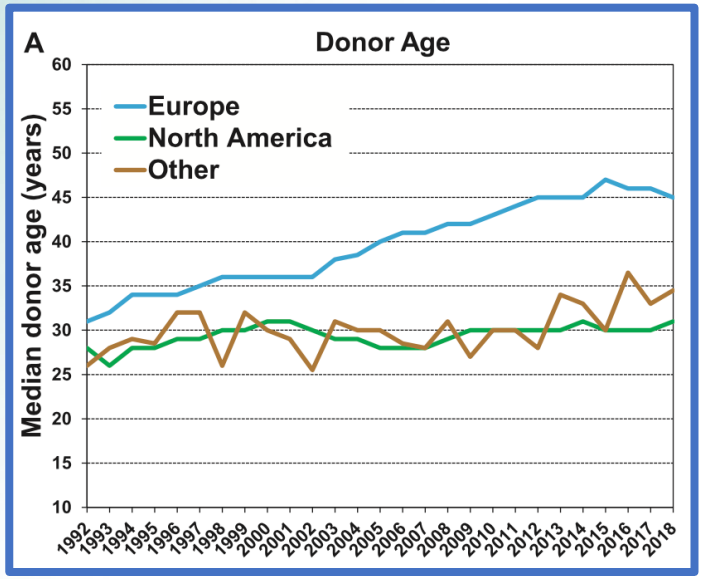
TRANSPLANTATION CARDIAQUE

DISPONIBILITÉ DE DONNEURS

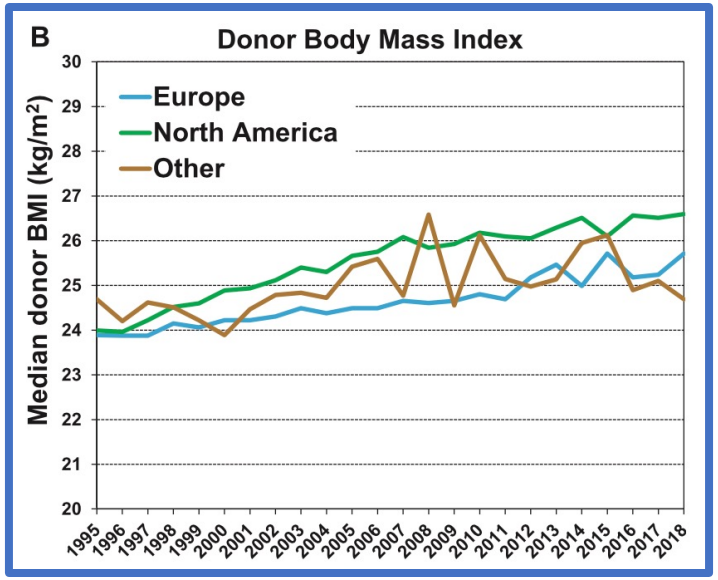


TRANSPLANTATION CARDIAQUE

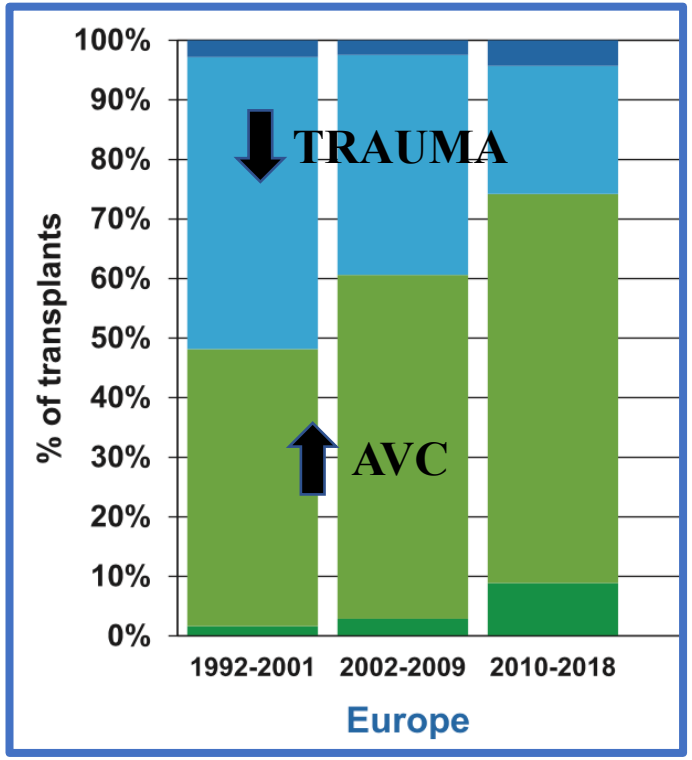
QUALITÉ DE DONNEURS



⬆ ÂGE



⬆ PROFILE CV



CAUSE du DÉCÈS

J Heart Lung Transplant 2020;39:1003-1015

TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS

- Comorbidités

- Patients immunisés

- ATCD de chirurgie cardiaque

- Assistances circulatoires mécaniques

J Heart Lung Transplant 2021;40:1035-1049

TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS - ACM

Score de répartition des greffons cardiaques

ETAPE 1 :
CALCUL DE L'INDEX DE RISQUE CARDIAQUE

La fonction de risque pré-greffe en liste d'attente

ETAPE 2 :
CALCUL DU SCORE CARDIAQUE COMPOSITE BRUT

La prise en compte des exceptions à l'index de risque cardiaque :
- Composante Expert Adulte (XPCA) (900 points)
- Composante Pédiatrique Standard (plage de 776 à 825 points)
- Composante Expert Pédiatrique (XPCP) (Niveau 2 : 1052 à 1101 points / Niveau 1 : 1102 à 1151 points)

ETAPE 3 :
CALCUL DU SCORE CARDIAQUE COMPOSITE PONDÉRÉ

L'application au Score d'un ensemble de filtres et de fonctions d'appariement donneur – receveur qui s'appliquent lors de la proposition du greffon cardiaque :
- La différence d'âge entre le donneur et le receveur
- Les groupes sanguins du donneur et du receveur
- La morphologie du donneur et du receveur
- Les résultats attendus de la greffe cardiaque

ETAPE 4 :
CALCUL DU SCORE NATIONAL D'ATTRIBUTION DES GREFFONS CARDIAQUES (SNACG)

Le calcul final du Score résulte d'une interaction entre le Score et la durée du trajet entre les lieux de prélèvement et de greffe

TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS - ACM

Score de répartition des greffons cardiaques: évaluation après 32 mois

Paris, 14 octobre 2020

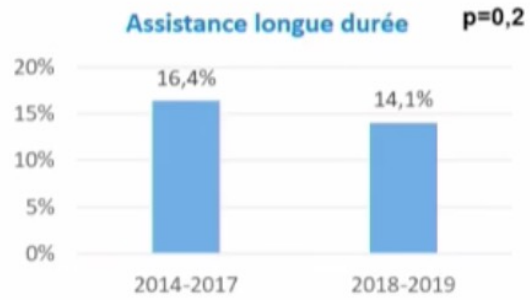
agence de la biomédecine

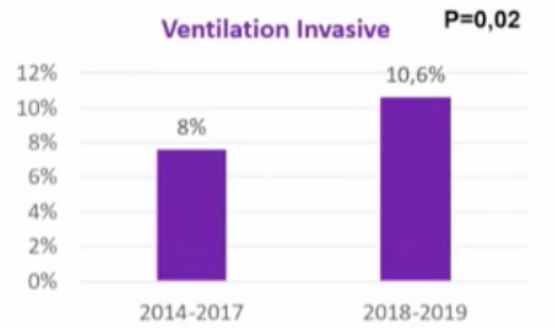
Journées de la Vitié

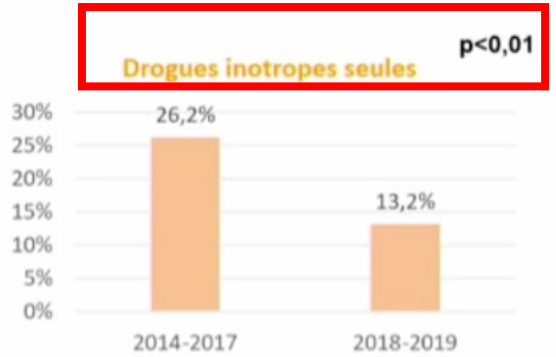
TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS - ACM

Caractéristiques des greffés: supports vitaux
(2014-2017 – 2018-juin 2019)



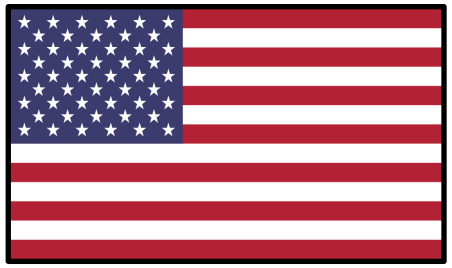




agence de la biomédecine

TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS - ACM

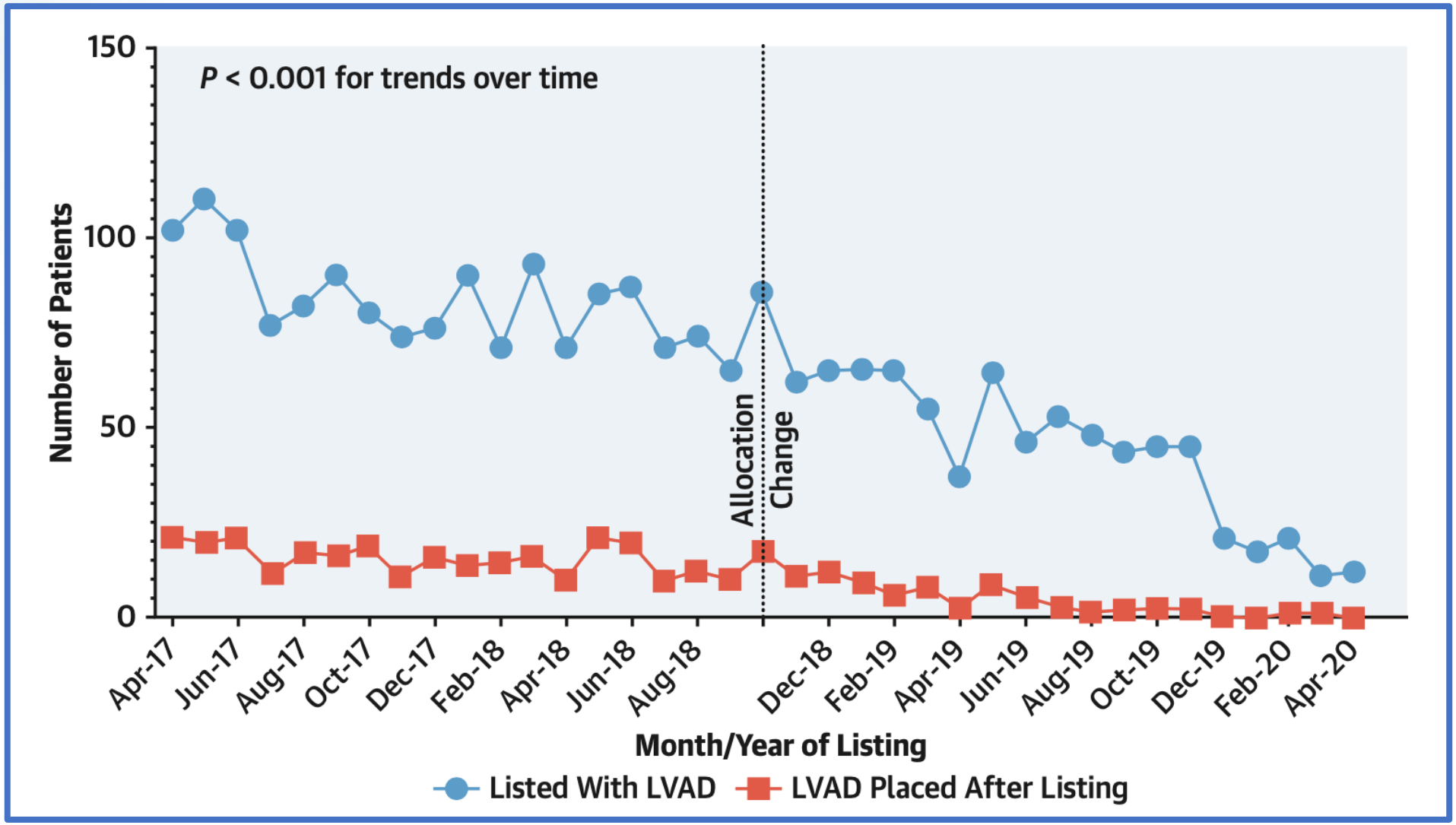


Status 1	• VA ECMO • Nondischargeable, surgically implanted, nonendovascular biventricular support device • MCSD with life-threatening ventricular arrhythmias
Status 2	• Nondischargeable, surgically implanted, nonendovascular LVAD • Percutaneous endovascular MCSD • Ventricular tachycardia/ventricular fibrillation, MCSD not required • MCSD with device malfunction/mechanical failure • TAH, BIVAD, RVAD, or VAD for single-ventricle patients
Status 3	• Dischargeable LVAD for discretionary 30 d • Multiple inotropes or single high-dose inotrope with continuous hemodynamic monitoring • VA ECMO after 7 d; percutaneous endovascular circulatory support device or IABP after 14 d • Nondischargeable, surgically implanted, nonendovascular LVAD after 14 d • MCSD with one of the following: device infection, hemolysis, pump thrombosis, right heart failure, mucosal bleeding, aortic insufficiency
Status 4	• Dischargeable LVAD without discretionary 30 d • Inotropes without hemodynamic monitoring • Retransplantation • Diagnosis of one of the following: congenital heart disease, ischemic heart disease with intractable angina, hypertrophic cardiomyopathy, restrictive cardiomyopathy, amyloidosis
Status 5	On the waitlist for at least one other organ at the same hospital
Status 6	All remaining candidates

UNOS℠

TRANSPLANTATION CARDIAQUE

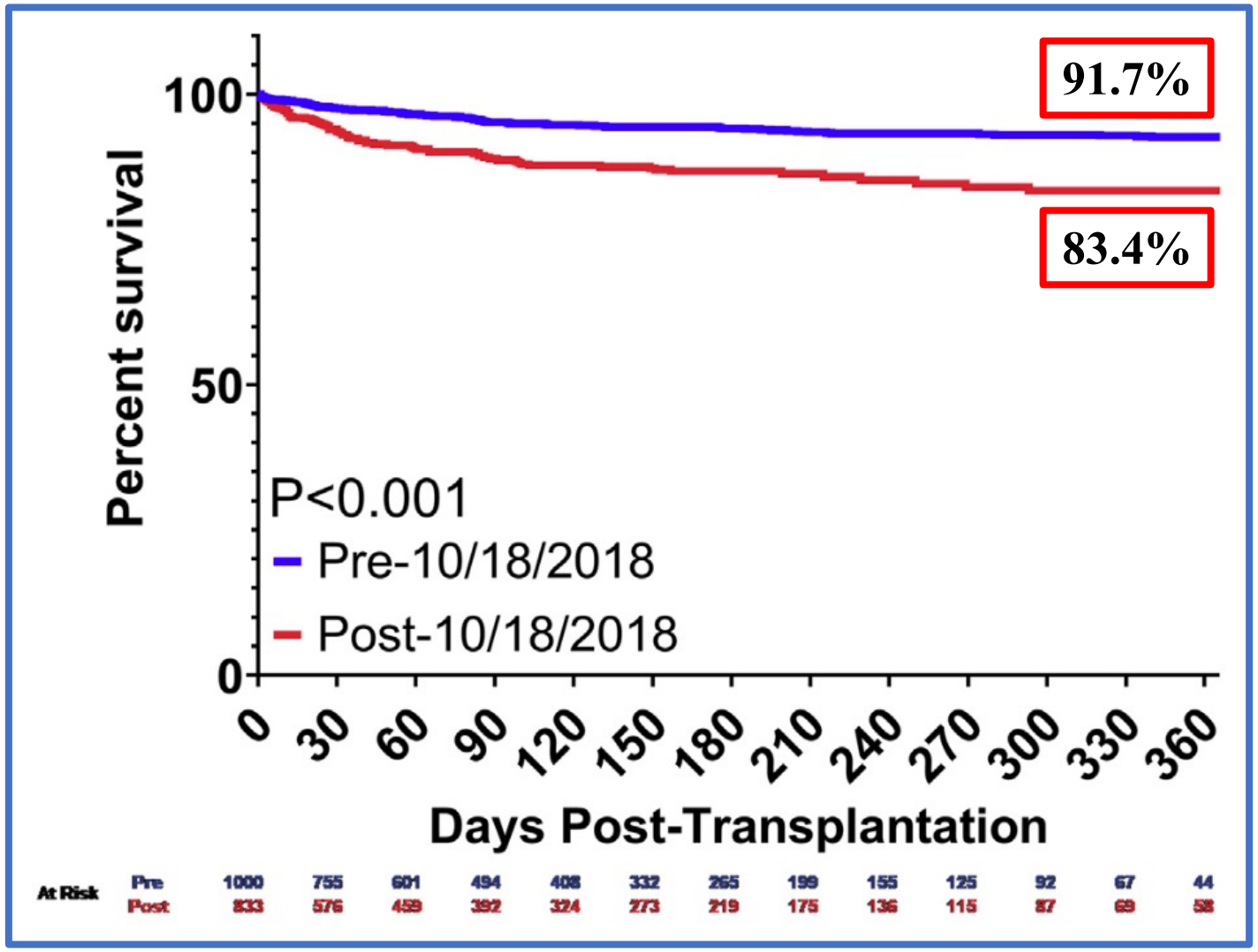
PROFIL DE RECEVEURS - ACM



J Am Coll Cardiol 2022;79:1092-1107

TRANSPLANTATION CARDIAQUE

PROFIL DE RECEVEURS - ACM



J Am Coll Cardiol HF 2021;9:420-429

TRANSPLANTATION CARDIAQUE

DÉFAILLANCE PRIMAIRE DU GREFFON

DONNEUR

- Age[5,11,39,66]
- Cause of death[40,68]
- Trauma[8,11]
- Cardiac dysfunction[40,69]
- Inotropic support[8,40]
- Comorbidities: diabetes, hypertension[4]
- Downtime of cardiac arrest
- Drug abuse: alcohol, cocaine, amphetamines
- Left ventricular hypertrophy
- Valvular disease
- Hormone treatment
- CAD/wall motion abnormalities on TTE
- Sepsis
- Alternate list/marginal donor allocation—not increased risk[7]
- Troponin trend
- Hypernatremia

DPG

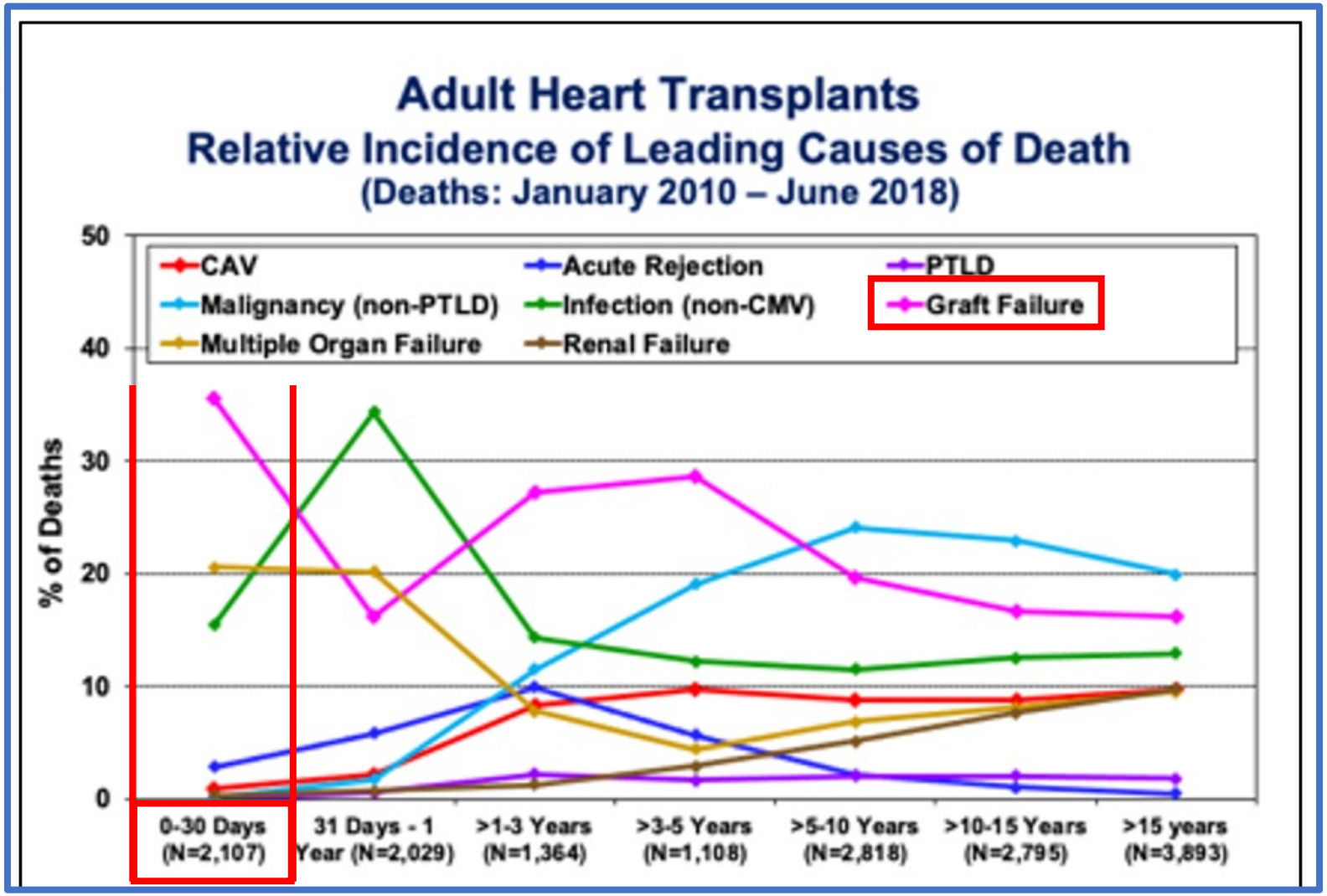
RECEVEUR

- Age[11]
- Weight[42]
- Mechanical support[5,39–41]
- Congenital heart disease as etiology of heart failure[5]
- Multiple reoperations
- LVAD explant
- Comorbidities: renal dysfunction, liver dysfunction (high MELD), DM
- Ventilator dependent
- Multiorgan transplant
- Elevated PVR
- Allosensitization
- Infection
- Retransplant

J Heart Lung Transplant 2014;33:327-340

TRANSPLANTATION CARDIAQUE

DÉFAILLANCE PRIMAIRE DU GREFFON



J Heart Lung Transplant 2019;38:1056-1066

TRANSPLANTATION CARDIAQUE

DÉFAILLANCE PRIMAIRE DU GREFFON

DEFINITION

Choc cardiogénique diagnostiqué pendant les **premières 24 heures** postopératoires pour lequel on ne peut pas identifier une cause spécifique (rejet hyperaigu, HTAP, complications chirurgicales)

CLASSIFICATION

DPG-G
Ventriculaire gauche
Biventriculaire

DPG-D
Ventriculaire droite

1. **PGD-Left ventricle (PGD-LV):**	*Mild PGD–LV*: *One* of the following criteria must be met:	LVEF ≤ 40% by echocardiography, *or* Hemodynamics with RAP > 15 mm Hg, PCWP > 20 mm Hg, CI < 2.0 L/min/m^2 (lasting more than 1 hour) requiring low-dose inotropes
	Moderate PGD-LV: Must meet one criterion from I *and* another criterion from II:	I. *One* criteria from the following: Left ventricular ejection fraction ≤ 40%, *or* Hemodynamic compromise with RAP > 15 mm Hg, PCWP > 20 mm Hg, CI < 2.0 L/min/m^2, hypotension with MAP < 70 mm Hg (lasting more than 1 hour) II. *One* criteria from the following: i. High-dose inotropes—Inotrope score > 10[a] *or* ii. Newly placed IABP (regardless of inotropes)
	Severe PGD–LV	Dependence on left or biventricular mechanical support including ECMO, LVAD, BiVAD, or percutaneous LVAD. Excludes requirement for IABP.
2. **PGD-right ventricle (PGD-RV):**	Diagnosis requires either both i and ii, or iii alone:	i. Hemodynamics with RAP > 15 mm Hg, PCWP < 15 mm Hg, CI < 2.0 L/min/m^2 ii. TPG <15 mm Hg and/or pulmonary artery systolic pressure < 50 mm Hg, *or* iii. Need for RVAD

J Heart Lung Transplant 2014;33:327-340

TRANSPLANTATION CARDIAQUE

DÉFAILLANCE PRIMAIRE DU GREFFON - ECMO VA

Auteur	[Reference]	Patients (%)	Survie
Pozzi	ICVTS 2018;27:778-84	38 (**17.9%**)	**44.7%**
Jacob	Clin Transplant 2019;33:e13538	31 (**3.0%**)	**61.2%**
DeRoo	JTCS 2019;158:1576-84	38 (**10.5%**)	**84.2%**
Connolly	Transplantation 2020;104:2189-95	49 (**25.5%**)	**79.5%**
Loforte	TP 2021;53:311-7	32 (**11.6%**)	**46.8%**
Noly	Can J Surg 2021;64:E567-77	66 (**14.5%**)	**42.4%**
Krishnamoorthy	ICVTS 2021;32:625-31	68 (**26.9%**)	**84.1%**

ECMO VA pour DPG
3-27%

Survie après ECMO VA pour DPG
42-84%

TRANSPLANTATION CARDIAQUE

DÉFAILLANCE PRIMAIRE DU GREFFON - ECMO VA

Dysfonction précoce du greffon* pour les greffes réalisées en 2020

Dysfonction précoce du greffon	N	%
Non	209	56,5
Oui	149	40,3
Manquant	12	3,2

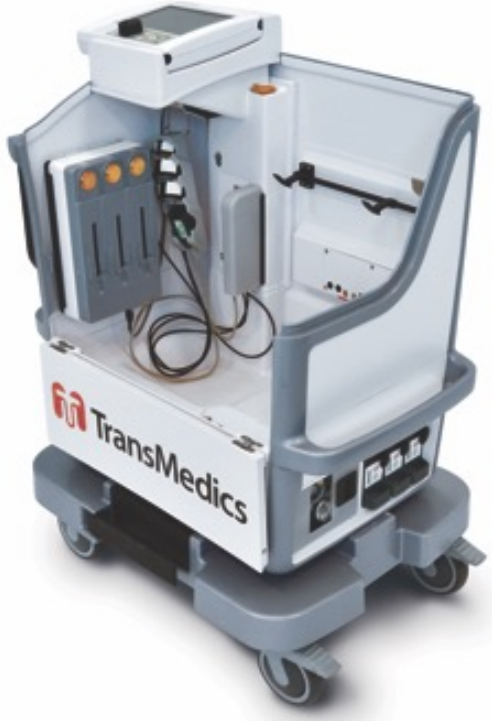
DÉFINITION

- *FEVG <30%*
- *ACM*
- *Rétransplantation*
- *Décès*

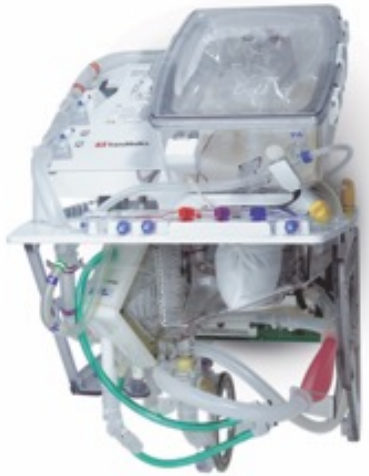
TRANSPLANTATION CARDIAQUE

ORGAN CARE SYSTEM

Monitor



Console

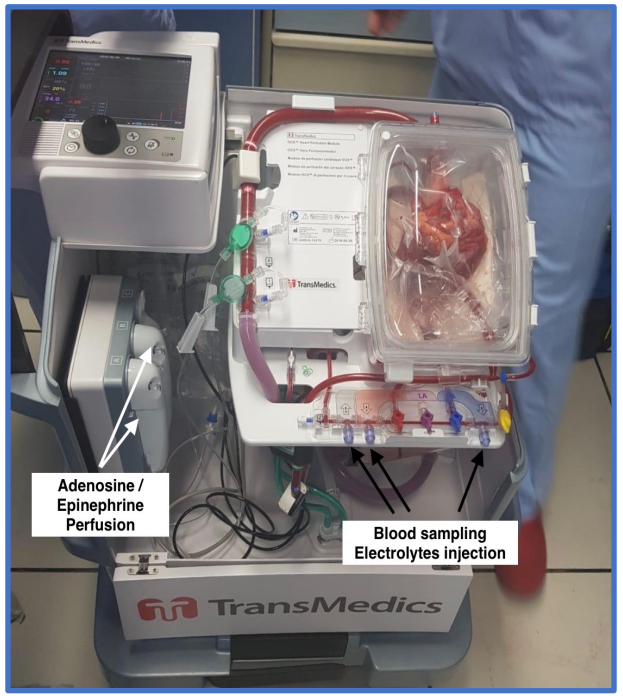


Module de Perfusion

TransMedics®

TRANSPLANTATION CARDIAQUE

ORGAN CARE SYSTEM



- machine portable

- perfusion en continu (pompe à flux pulsatile)

- oxygénateur

- normothermie (échangeur thermique)

TransMedics®

TRANSPLANTATION CARDIAQUE

ORGAN CARE SYSTEM

MONITORAGE
EVALUATION

ECG - Hct - SaO_2

Température

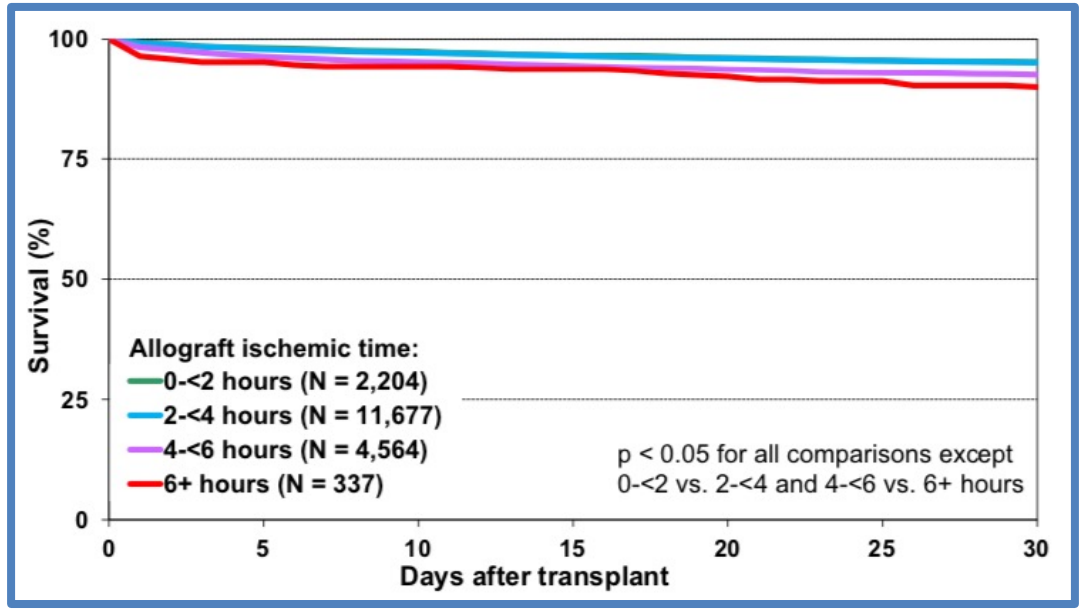
Débit / Pression aortique

Débit coronarien

Lactate <5 mmol/L

FACTEUR PREDICTIF

TEMPS D'ISCHÉMIE

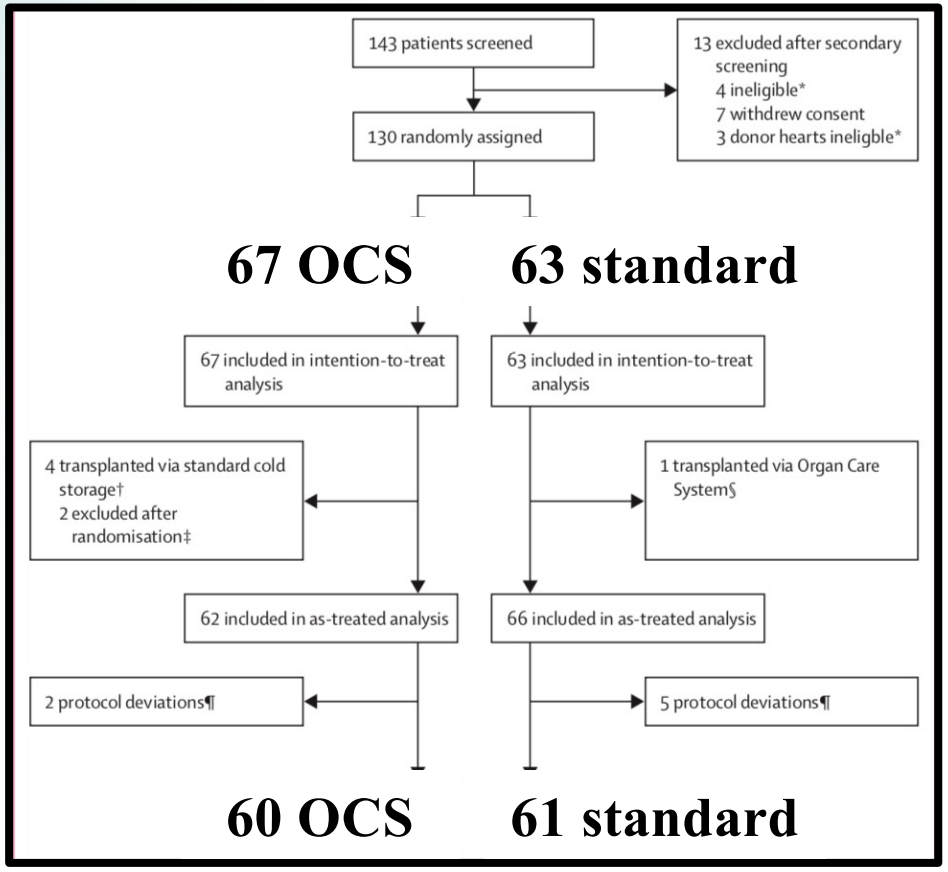


J Heart Lung Transplant 2017;36:1037-1046

TRANSPLANTATION CARDIAQUE

ORGAN CARE SYSTEM

PROCEED II Trial



	Organ Care System group	Standard cold storage group	Between-group difference (one-sided 95% UCB or 95% CI)	p value
Primary endpoint (30 day patient and graft survival)				
Intention-to-treat	63/67 (94%)	61/63 (97%)	2·8 (8·8)	0·45
As-treated	58/62 (94%)	64/66 (97%)	3·5 (9·6)	0·36
Per-protocol	56/60 (93%)	59/61 (97%)	3·4 (9·9)	0·39
Secondary endpoints (as-treated population)				
Patients with cardiac-related serious adverse events	8 (13%)	9 (14%)	1 (–12 to 11)	0·90
Incidence of severe rejection	11 (18%)	9 (14%)	4 (–8 to 17)	0·52
Median ICU length of stay (h)	147 (107–212)	137 (97–197)	10 (–10 to 42)	0·24

Lancet 2015;385:2577-2584

SFAR le Congrès
du 22 au 24 septembre 2022
Palais des Congrès de Paris

TRANSPLANTATION CARDIAQUE

ORGAN CARE SYSTEM

1

PERFUSION EX-VIVO

2

DONATION AFTER CIRCULATORY DEATH (MAASTRICHT III)

TRANSPLANTATION CARDIAQUE

PERFUSION EX-VIVO

Quand utiliser l'OCS?

Transplantations cardiaques complexes

- **Patients multi-opérés**

  cardiopathies congénitales

- **ACM de logue durée**

  LVAD, CARMAT

01/01/2020 - 31/12/2021
45 greffes dont 20 complexes

DOSSIER INNOVATION
LYON - 28/05/21

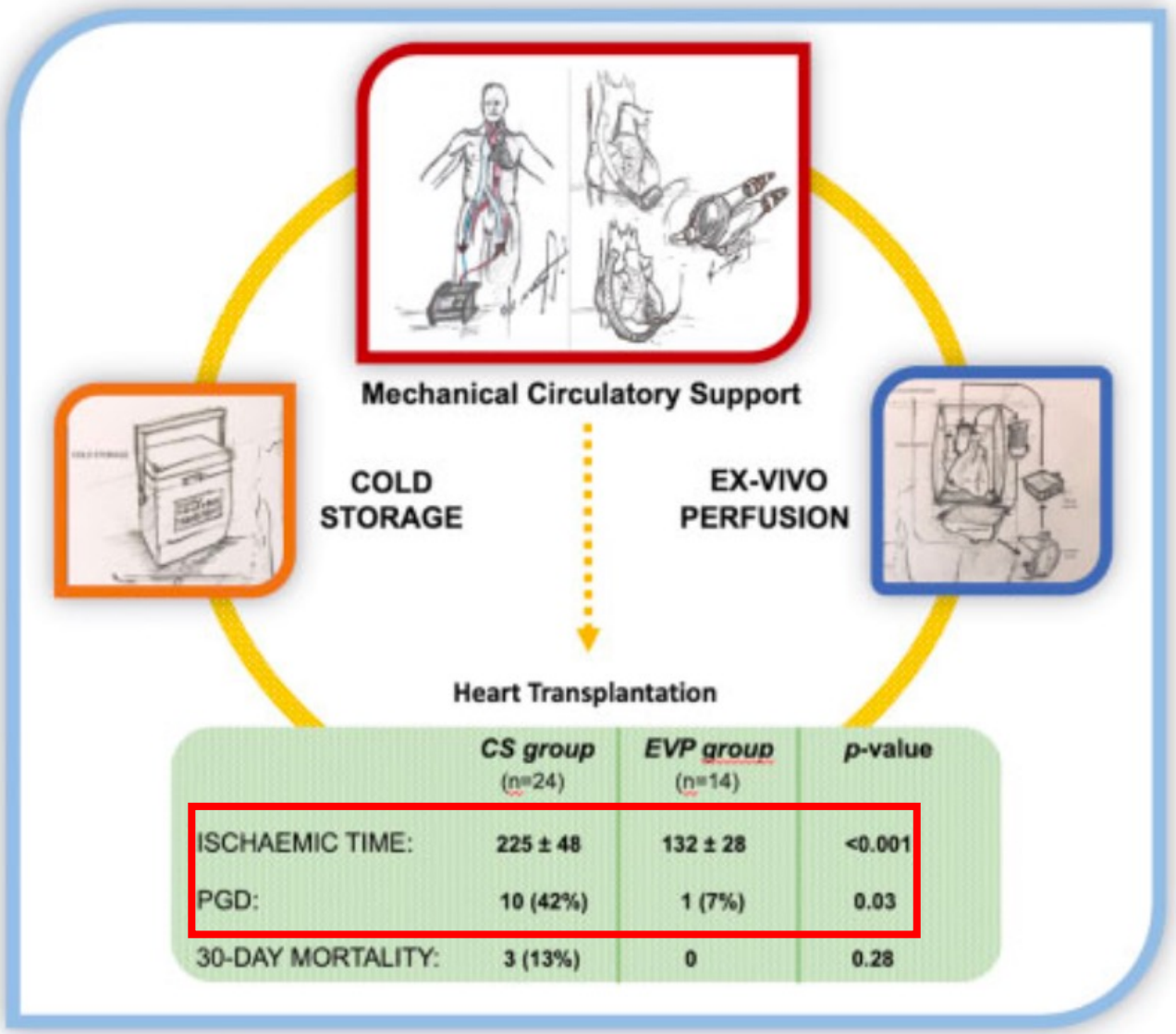
Donneurs marginaux

- âge ≥55 ans
- ischémie totale >4 heures
- FEVG <50%
- HVG (SIV ≥15 mm)
- arrêt cardiaque récupéré
- pas de coronarographie

TRANSPLANTATION CARDIAQUE

1

PERFUSION EX-VIVO



	CS group (n=24)	EVP group (n=14)	p-value
ISCHAEMIC TIME:	225 ± 48	132 ± 28	<0.001
PGD:	10 (42%)	1 (7%)	0.03
30-DAY MORTALITY:	3 (13%)	0	0.28

Interact Cardiovasc Thorac Surg 2021;32:476-482

TRANSPLANTATION CARDIAQUE

PERFUSION EX-VIVO

1

Heart transplantation of patients with ventricular assist devices: impact of normothermic ex-vivo preservation using organ care system compared with cold storage

	OCS ($n = 25$)	CS ($n = 10$)
LVAD, n (%)	20(80)	10(100)
ECMO, n (%)	2(8)	
CARMAT, n (%)	3(12)	

	OCS ($n = 25$)	CS ($n = 10$)	*P* value
Total ischemic time (minutes)	74.6 ± 13	210 ± 23	< 0.001
OCS perfusion time (minutes)	348.4 (132;955)	NA	NA
Mean total out of body time (minutes)	423 ± 67	210 ± 23	0.002
Warm ischemic time (minutes)	53.4 ± 12.3	60.2 ± 11.5	0.8
MCS after Htx (%)	24	60	0.02
CPB time (minutes)	279 ± 87	256 ± 69.2	0.4
Duration Inotropic support (hours)	103 (47; 465)	236 (153;423)	0.1
ITU stay-days	16 (3;50)	20 (12; 52)	0.3
30-day survival (%)	96	100	0.5

J Cardiothorac Surg 2020;15:323-328

TRANSPLANTATION CARDIAQUE

PERFUSION EX-VIVO

OCS Heart EXPAND Trial

CRITÈRES D'INCLUSION

Ischémie totale ≥4 heures

ou

Ischémie totale ≥2 heures + au moins 1 FdR entre HVG, FEVG 40-50%, AC ≥20 min, âge >55 ans

RÉSULTATS

93 donneurs marginaux
*75 transplantations (**80.6%**)*
*DPG sévère **10.7%***
*Survie 30j **94.7%***

Donneurs marginaux

J Heart Lung Transplant 2019;38:S42

TRANSPLANTATION CARDIAQUE

MAASTRICHT III COEUR

1967

THE OPERATION

A HUMAN CARDIAC TRANSPLANT: AN INTERIM REPORT OF A SUCCESSFUL OPERATION PERFORMED AT GROOTE SCHUUR HOSPITAL, CAPE TOWN

S Afr Med J 1967;41:1271-1274

2014

Adult heart transplantation with distant procurement and ex-vivo preservation of donor hearts after circulatory death: a case series

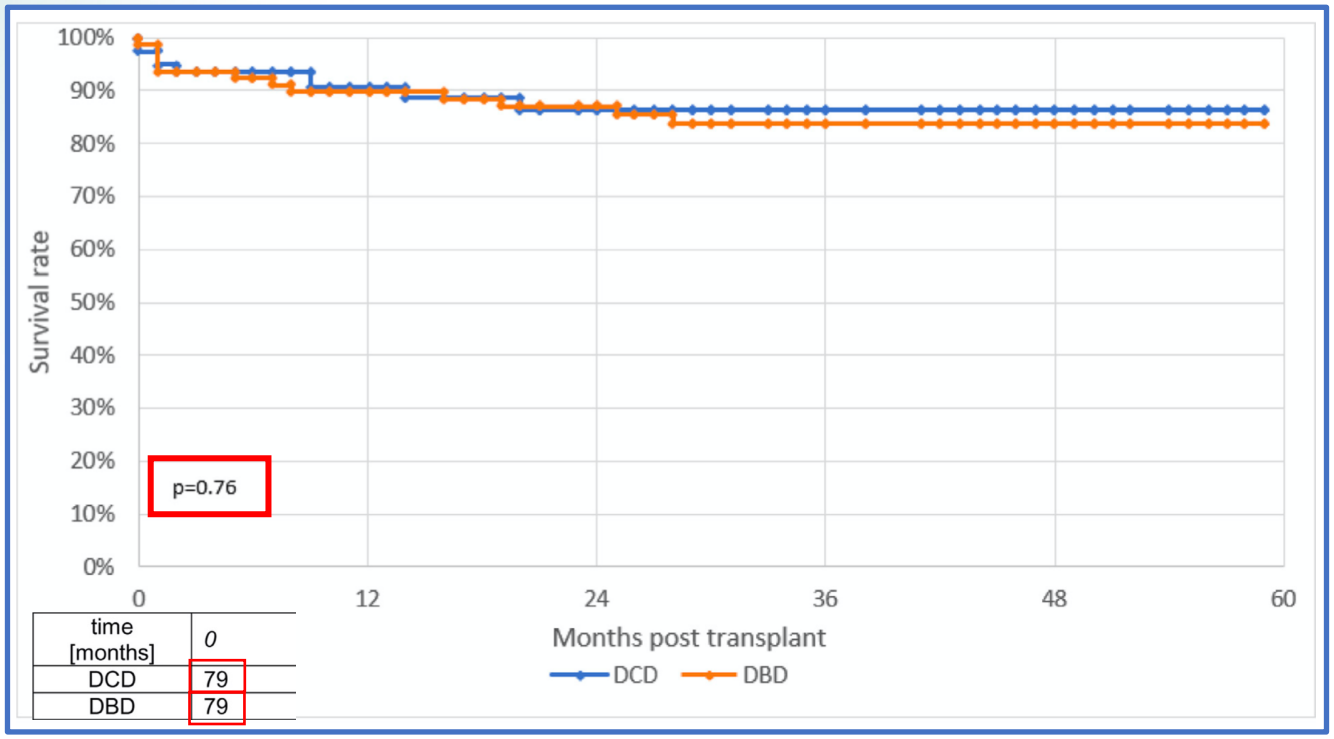
Lancet 2015;385:2585-2591

TRANSPLANTATION CARDIAQUE

MAASTRICHT III COEUR

A 5-year single-center early experience of heart transplantation from donation after circulatory-determined death donors

EXPERIENCE ANGLAISE



	DCD vs DBD		
	DCD, *n* = 79	DBD, *n* = 79	*p*-value
ECMO	12 (15)	5 (6)	0.12
LVEF,	60 (54–63)	60 (55–63)	0.45

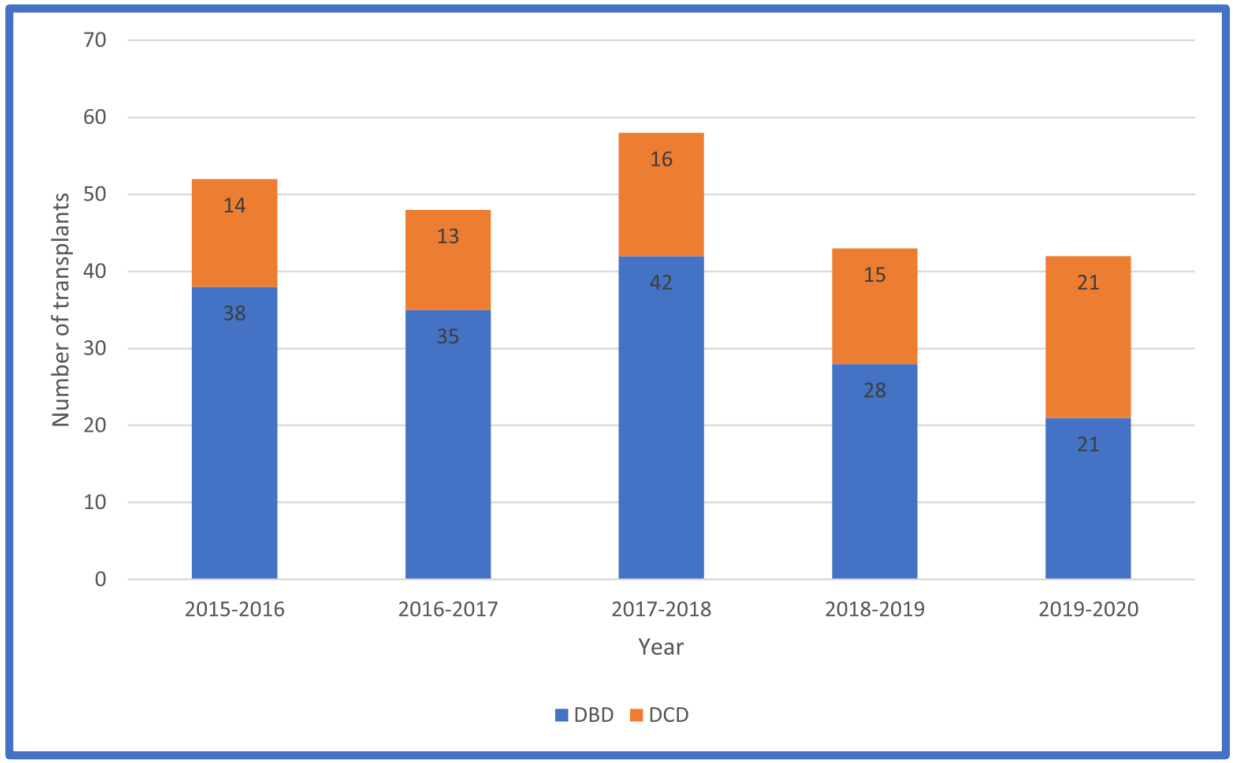
NHS Royal Papworth Hospital NHS Foundation Trust

J Heart Lung Transplant 2020;39:1463-1475

TRANSPLANTATION CARDIAQUE

MAASTRICHT III COEUR

A 5-year single-center early experience of heart transplantation from donation after circulatory-determined death donors



+48%

NHS Royal Papworth Hospital NHS Foundation Trust

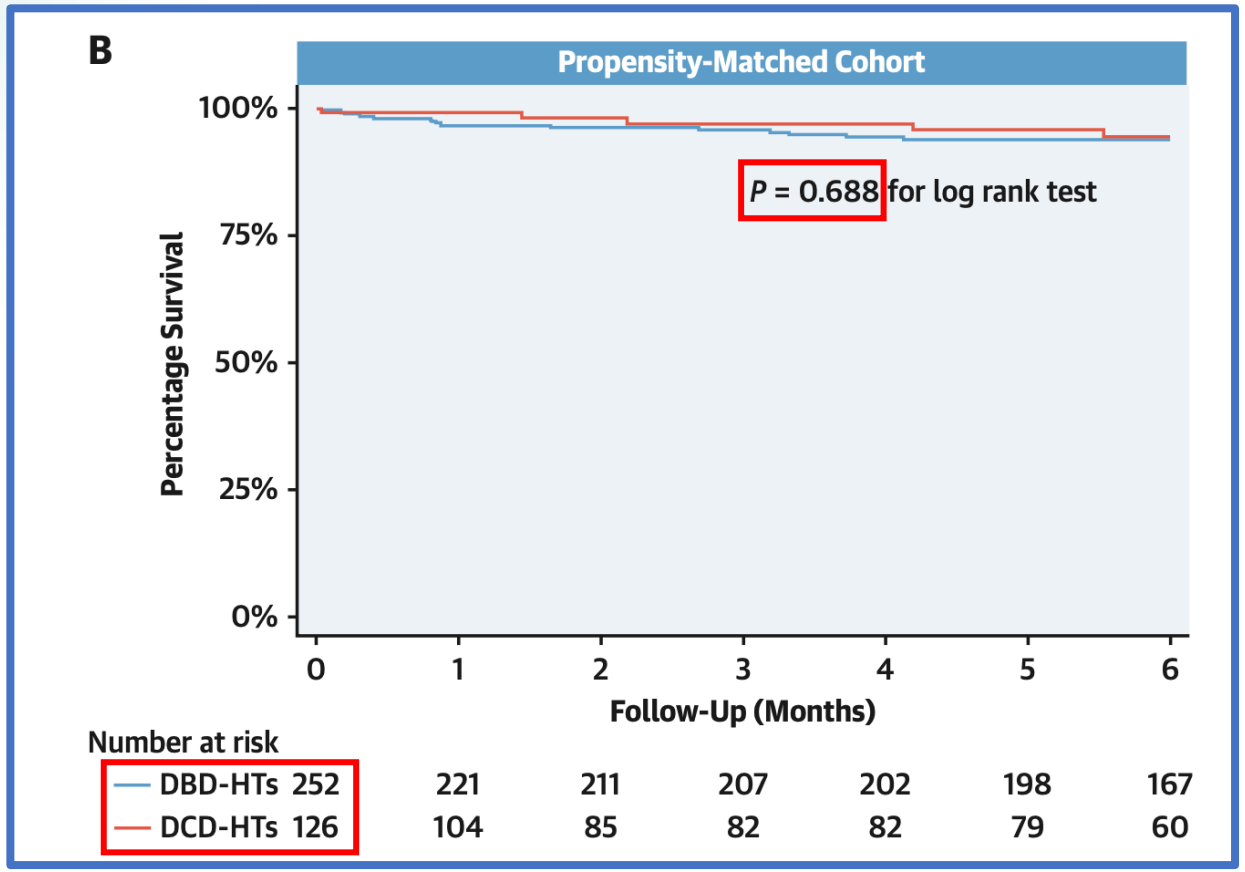
EXPERIENCE ANGLAISE

J Heart Lung Transplant 2020;39:1463-1475

TRANSPLANTATION CARDIAQUE

MAASTRICHT III COEUR

Feasibility and Potential Impact of Heart Transplantation From Adult Donors After Circulatory Death



EXPERIENCE AMÉRICAINE

127 DONNEURS DCD

vs.

2961 DONNEURS DBD

J Am Coll Cardiol 2022;79:148-162

TRANSPLANTATION CARDIAQUE

2

MAASTRICHT III COEUR

Prélèvement cardiaque à des fins scientifiques sur donneur Maastricht 3

Protocole PFS 20-004


agence de la Biomédecine

Autorisation depuis mai 2020
Appel d'Offre Recherche 2020

Objectifs de l'étude

1. Valider un protocole de prélèvement cardiaque M3 en France

2. Evaluer la viabilité du greffon cardiaque M3 sur machine de perfusion *ex vivo*

3. Analyse métabolomique du cœur M3 durant la perfusion *ex vivo* normothermique au sang

Julien Guihaire

TRANSPLANTATION CARDIAQUE

PERSPECTIVES

POOL de DONNEURS

Donneurs marginaux
M3 cœur

MEILLEURE PRÉSERVATION

Perfusion ex-vivo

TRANSPLANTATION CARDIAQUE

XENOTRANSPLANTATION

Genetically Modified Porcine-to-Human Cardiac Xenotransplantation

N Engl J Med 2022;387:35-44

SFAR

le Congrès

du 22 au 24 septembre 2022

Palais des Congrès de Paris

www.sfar-lecongres.com