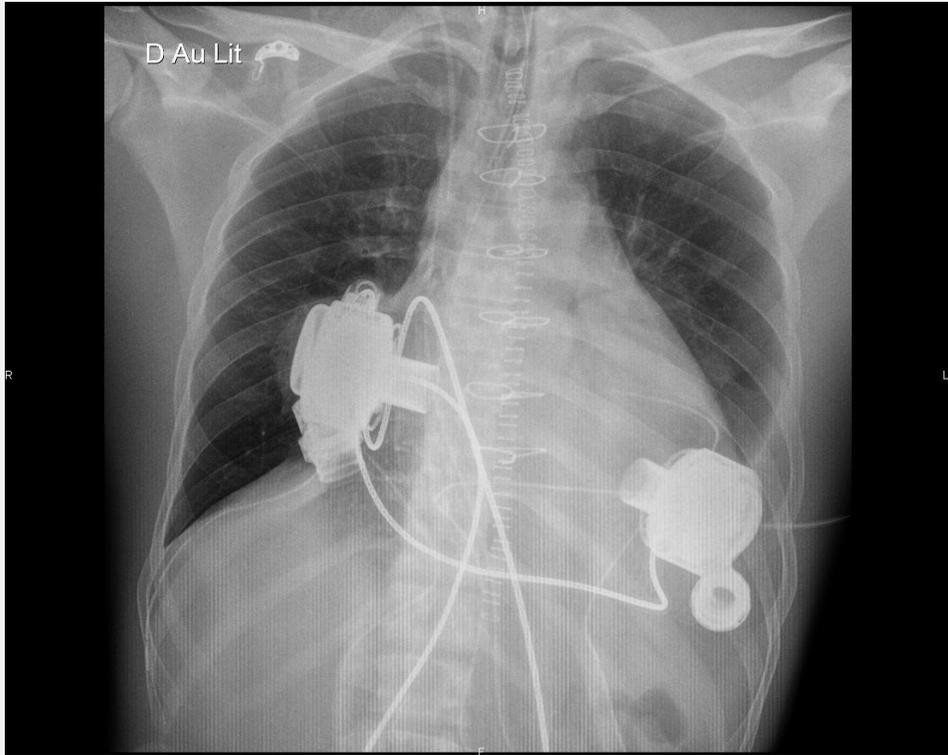
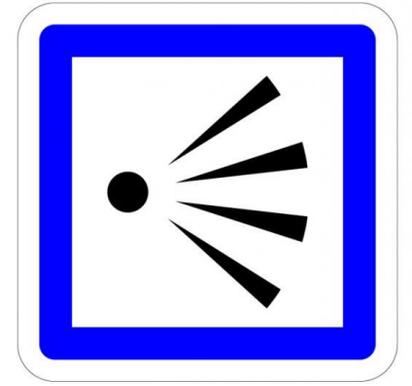
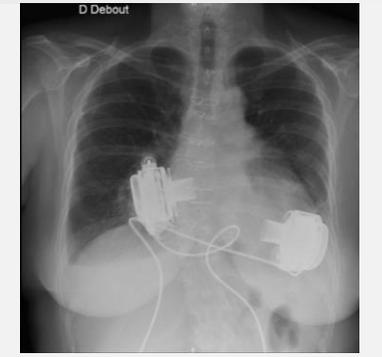
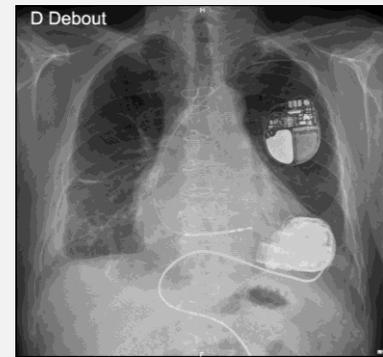
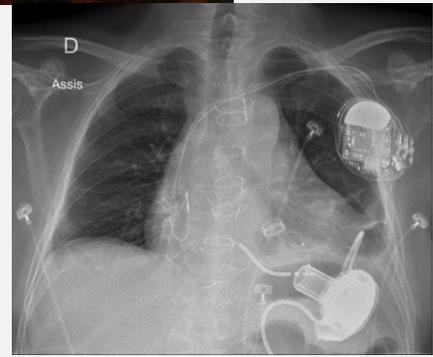
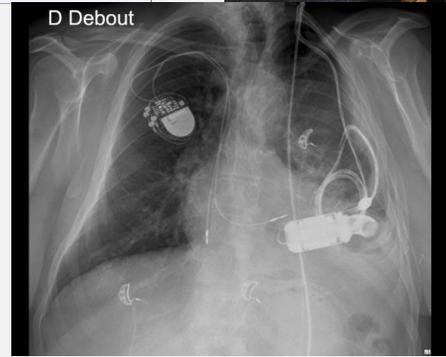
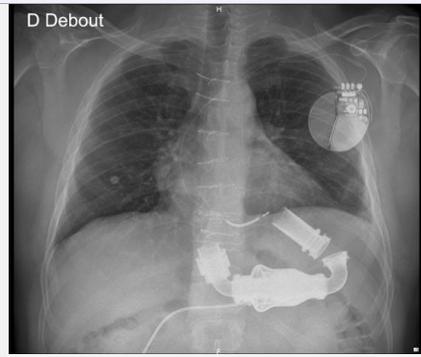
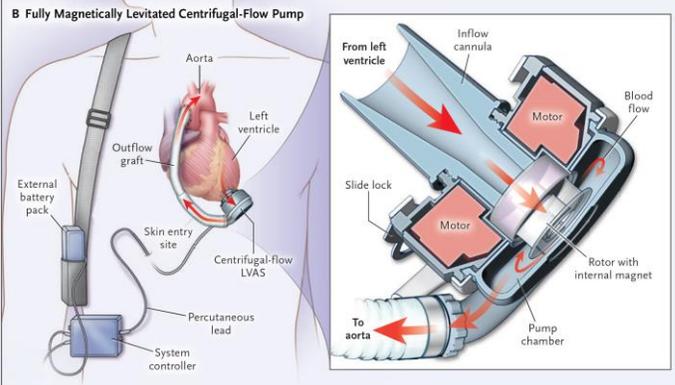
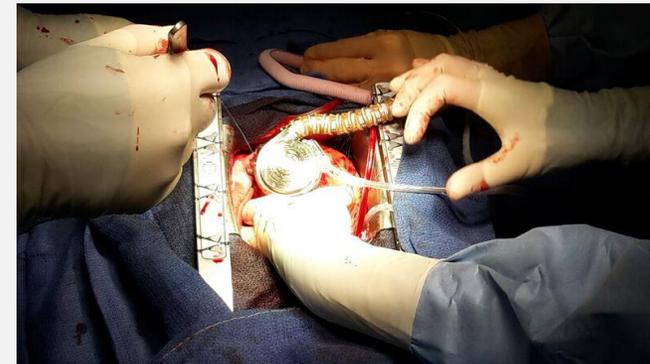
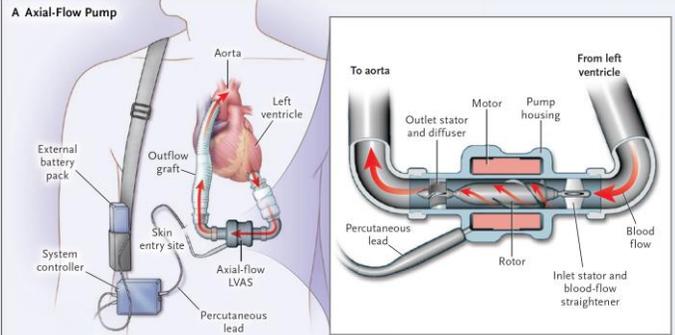
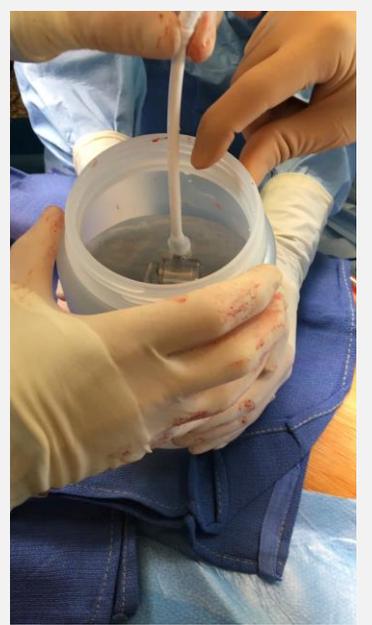


ASSISTANCE CIRCULATOIRE DE LONGUE DURÉE ET INFECTION: LE POINT DE VUE DU CHIRURGIEN



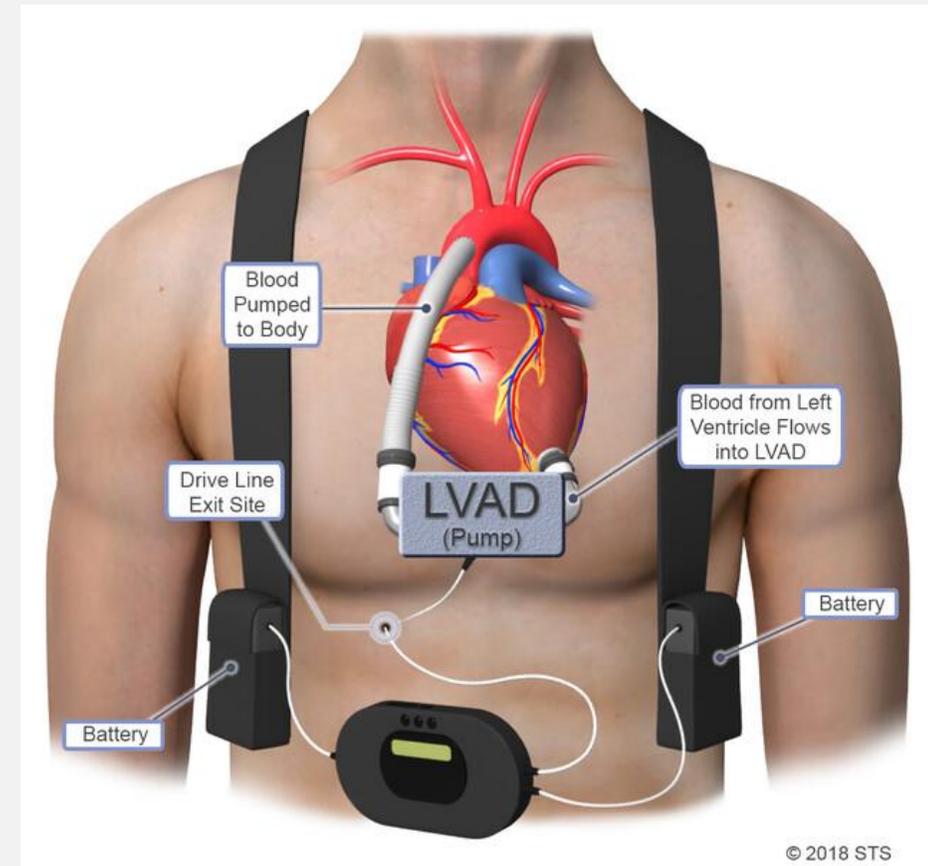
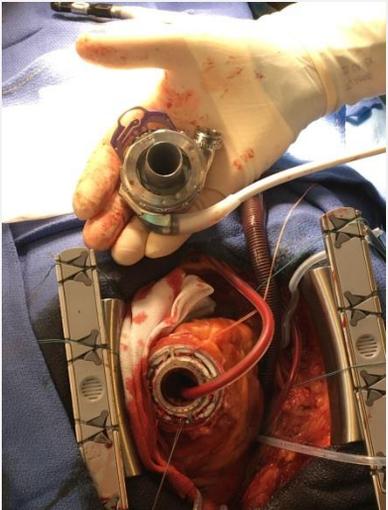
Erwan Flécher, Rennes,
Enseignement DES Maladies Infectieuses 2024

ACM DE LONGUE DURÉE: DE QUOI PARLE T'ON?



LVAD: POSSIBLES INDICATIONS D'IMPLANTATION

- En attente de récupération (BTR)
- En attente d'évaluation (BTC)
- **En attente de greffe (BTT)**
- **En implantation permanente/définitive (DT)**





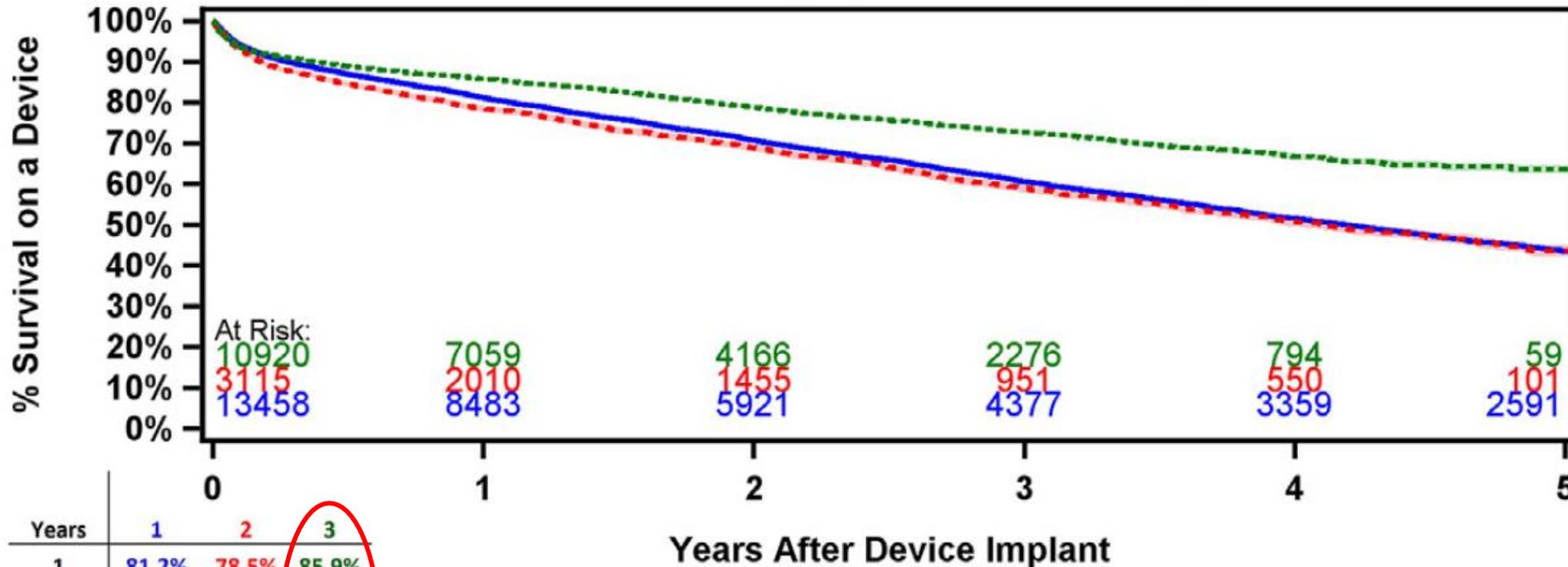
SURVIVAL LVAD

THE SOCIETY OF THORACIC SURGEONS INTERMACS ANNUAL REPORT

The Society of Thoracic Surgeons Intermacs
2023 Annual Report: Focus on Magnetically
Levitated Devices



Kaplan-Meier Survival by Era and Device Type
Intermacs: January 1, 2013 - December 31, 2022



At Risk:
10920
3115
13458

7059
2010
8483

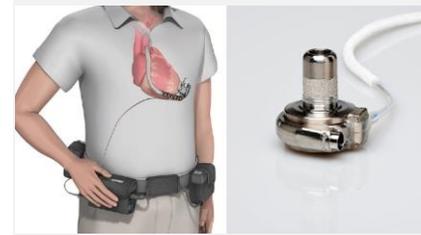
4166
1455
5921

2276
951
4377

794
550
3359

59
101
2591

- 1. Historical Non-Mag-Lev 2013-2017 (n = 13458, Deaths = 5245)
- - - 2. Non-Mag-Lev 2018-2022 (n = 3115, Deaths = 1210)
- ... 3. Mag-Lev 2018-2022 (n = 10920, Deaths = 2343)

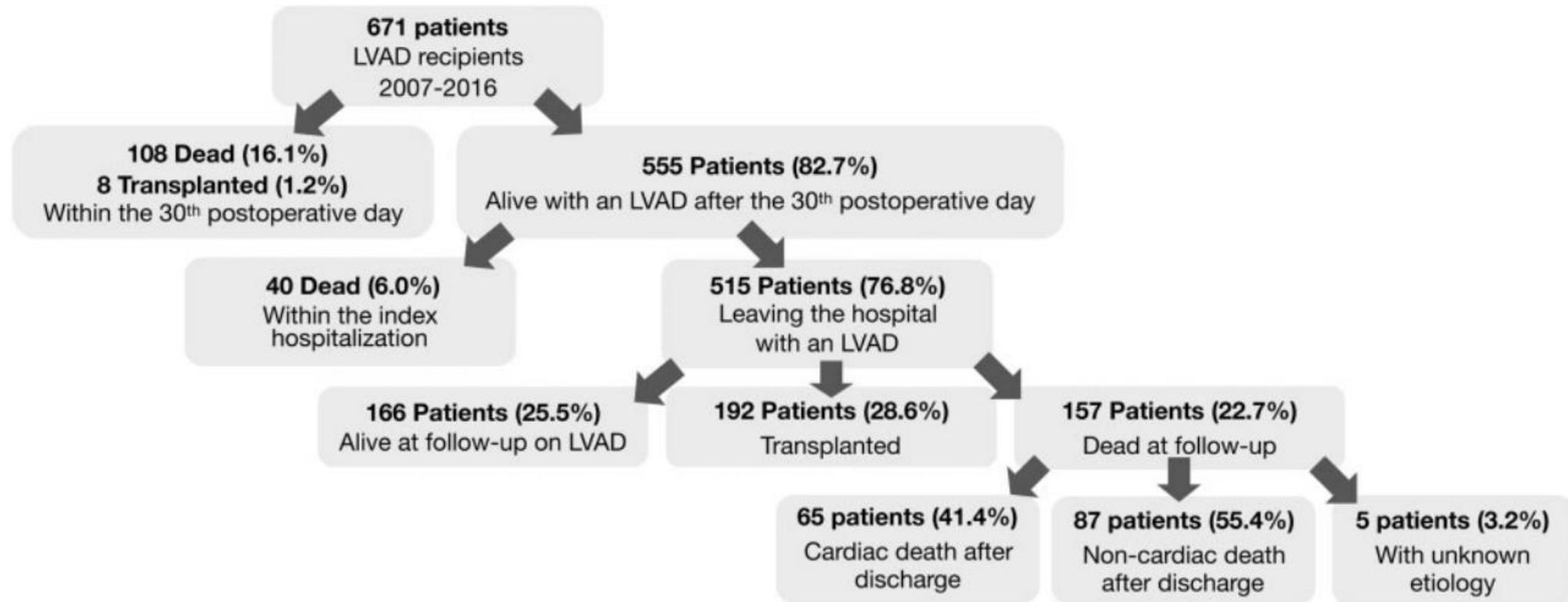


to follow up. Estimates of the primary end point (alive while on LVAD support or having a transplant) at 1, 2, 3 and 5 years after implantation were 65.2%, 59.7%, 55.9% and 47.7%, respectively.

Current results of left ventricular assist device therapy in France: the ASSIST-ICD registry

Temporary circulatory support before LVAD, n (%)

Impella [®]	64 (9.5)
IABP	59 (8.8)
ECLS	144 (21.5)

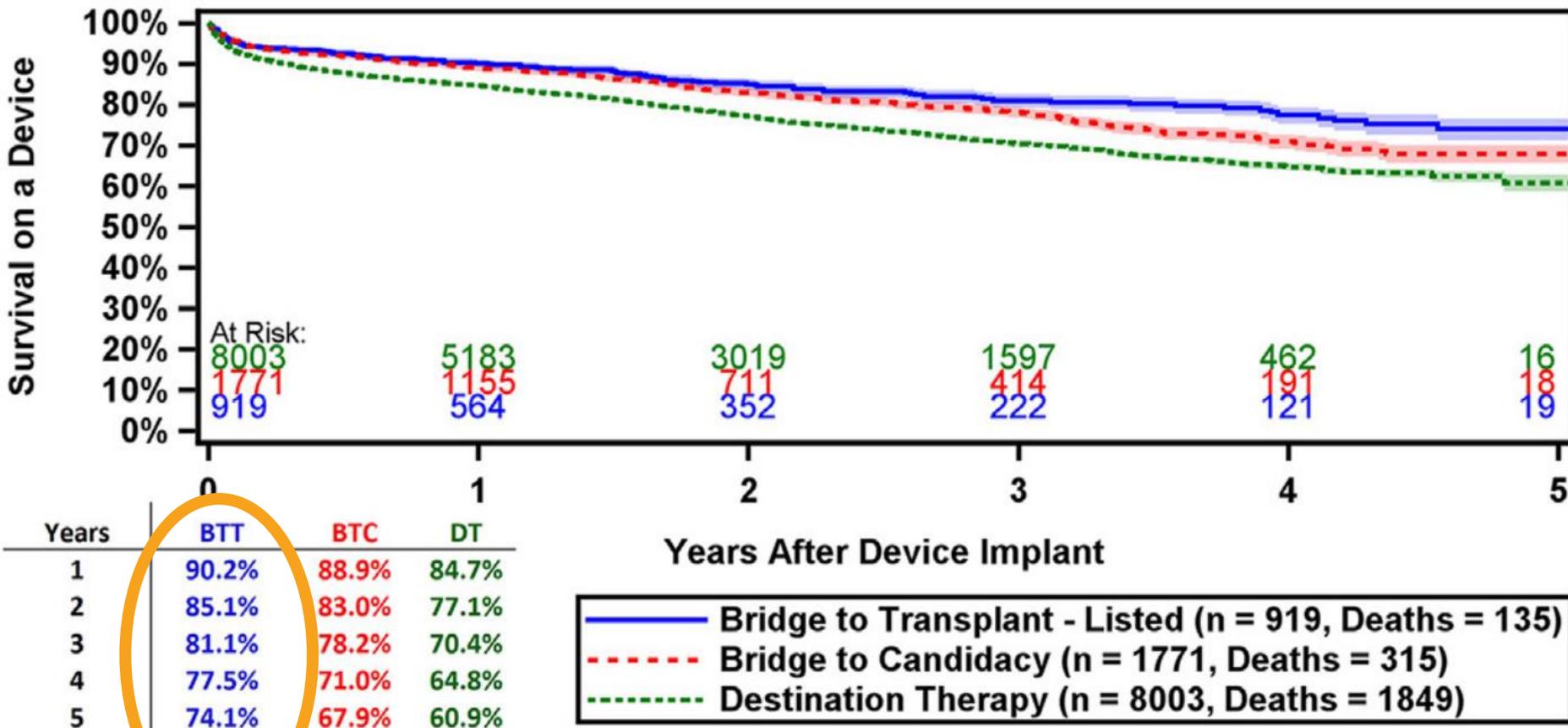


SURVIE: BTT > DT

(Ann Thorac Surg 2024;117:33-44)

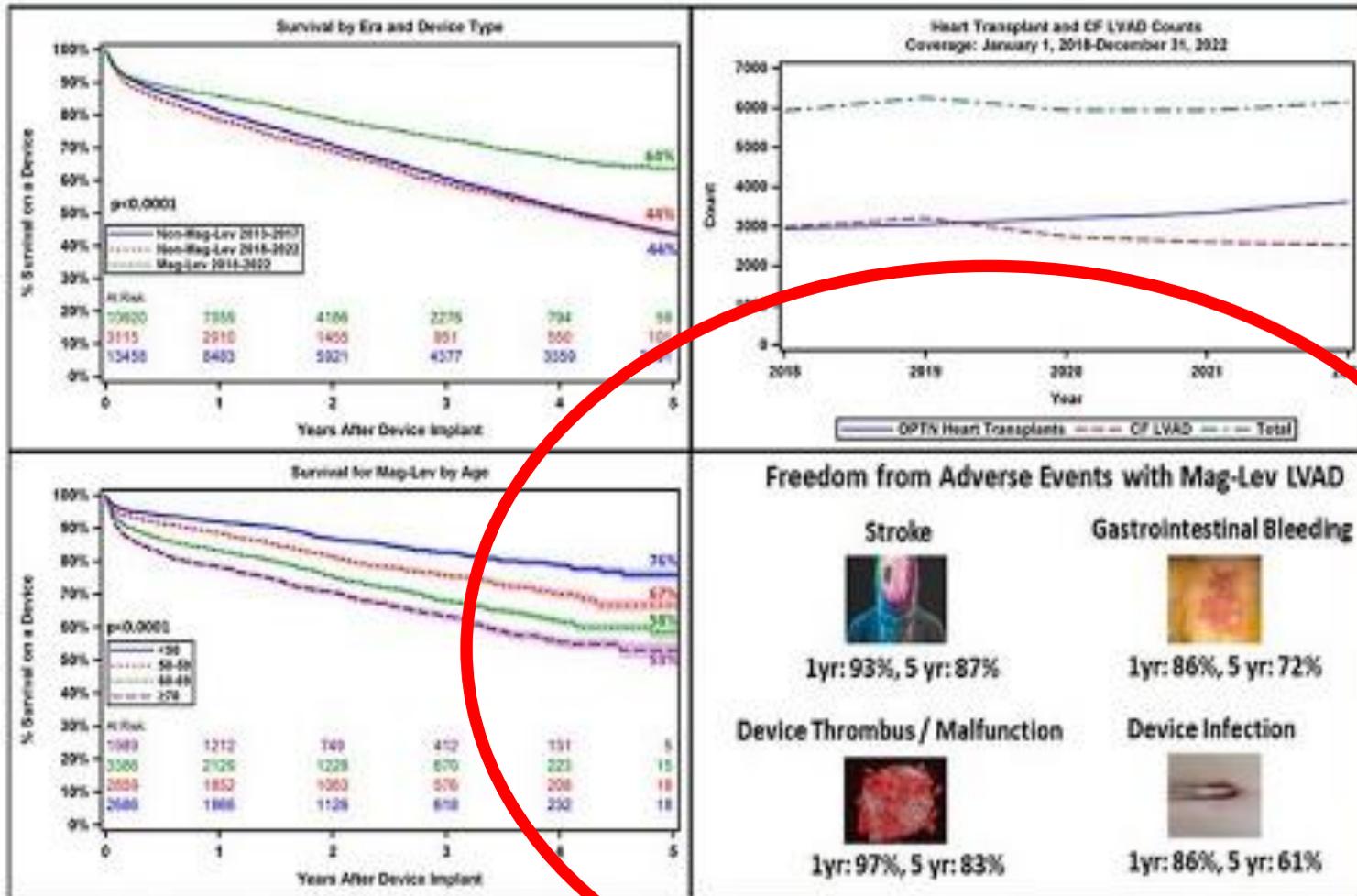
C

Survival for Primary CF LVAD by Device Strategy
Intermacs: January 1, 2013 - December 31, 2022



2023 Annual STS-Intermacs Report

LVAD:
COMPLICATIONS



Real-World Outcomes with Mag-Lev LVAD:

- Overall Survival:
 - 1-year: 86%
 - 5-year: 64%
- Survival for Age <50:
 - 1-year: 92%
 - 5-year: 76%
- Survival for Age ≥70:
 - 1 year: 78%
 - 5-year: 53%
- Reduced Burden of Major Adverse Events

Mag-Lev=Magnetically Levitated; LVAD = Left Ventricular Assist Device; CF = Continuous Flow

THE ANNALS OF
THORACIC SURGERY

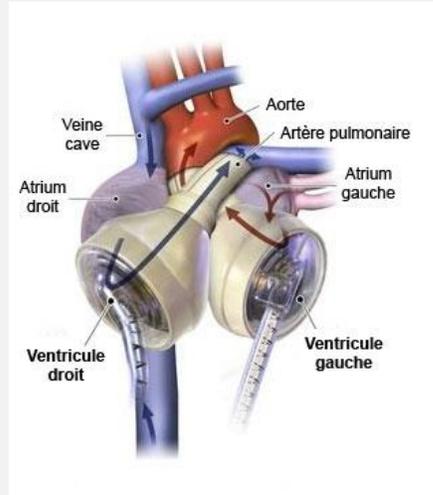
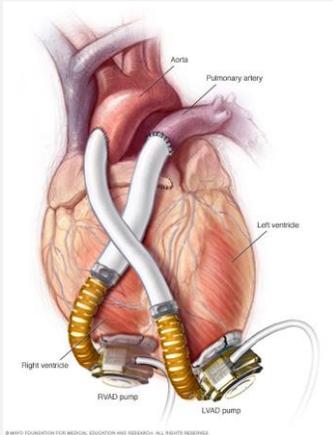
Official Journal of The Society of Thoracic Surgeons and the Southern Thoracic Surgical Association

Jorde, U., et al, 2024

#VisualAbstract #AnnalsImages
@annalsthorsurg



DÉFAILLANCE BIVENTRICULAIRE : QUELLES OPTIONS?



+/-
experimental



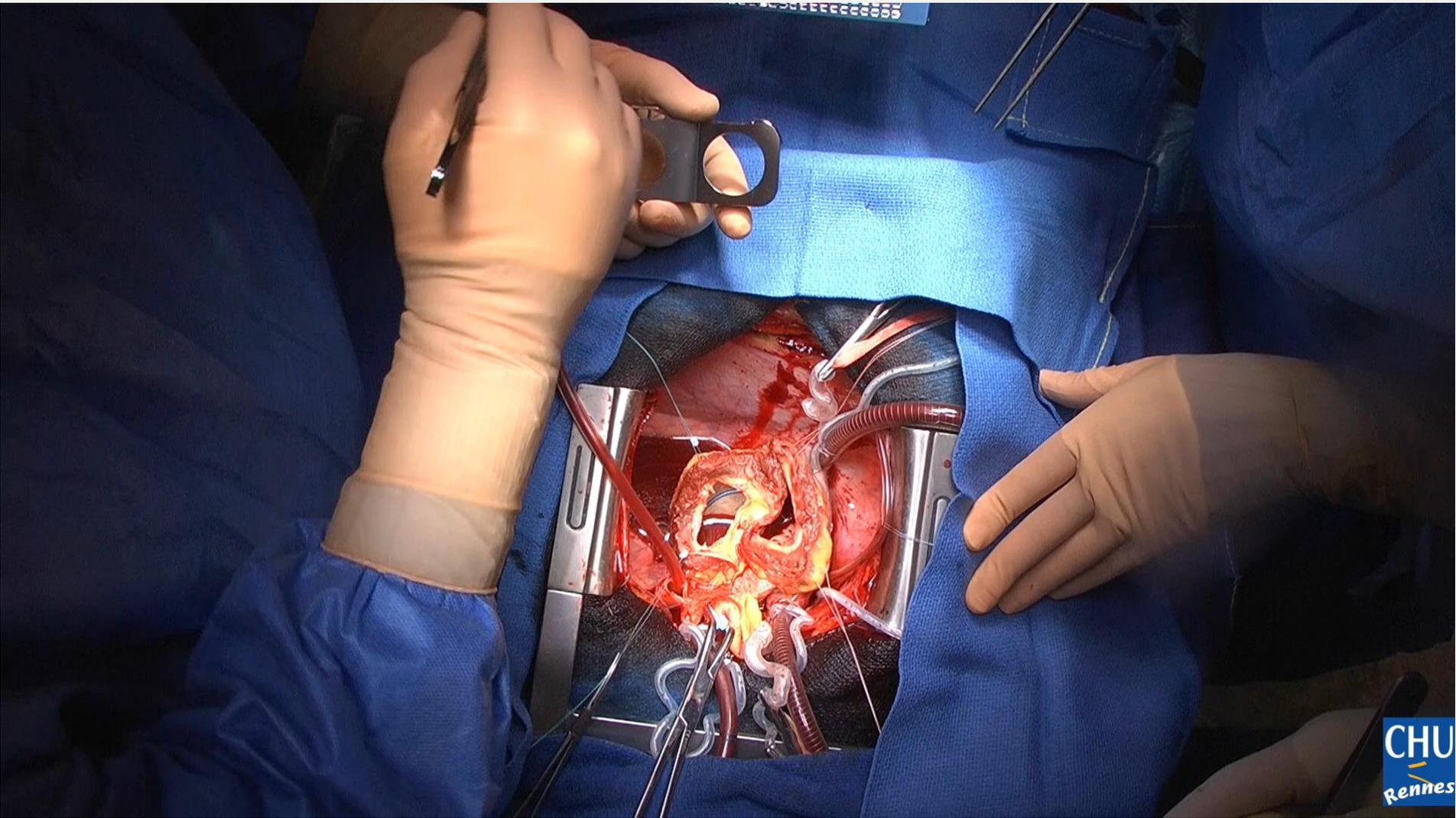
No CE Mark approval,
complicated to get



Experimental,
only clinical trial



Palliative care



EFICAS - CAR2019-FR

Etude de cohorte prospective multicentrique chez les patients insuffisants cardiaques biventriculaires irréversibles pour évaluer l'EFficacité, l'utiilité Clinique du Coeur Artificiel Total CArmat, sa Sécurité et son coût, en tant que pont à la transplantation



Their life.



Your skills.



Our technology.

POPULATION DE L'ÉTUDE

Taille de l'échantillon : 52 patients
Patients éligibles à la transplantation cardiaque qui présentent une insuffisance biventriculaire irréversible. Indication BTT ou BTC.

Critère de jugement primaire

Survie à 180 jours sans AVC invalidant après implantation de la prothèse Carmat, ou jusqu'à la transplantation si elle survient avant 180 jours. Un taux de succès >38% sera considéré comme preuve d'efficacité.

Critère de jugement secondaire

Analyse coût/utilité avec un groupe comparateur (cohorte 2) traité par thérapie standard.

CIPV 9.0 - Sept 2022

CHU
Rennes

CARMAT

INFECTIONS DE POMPE



Différents phénotypes d'infection de pompe...

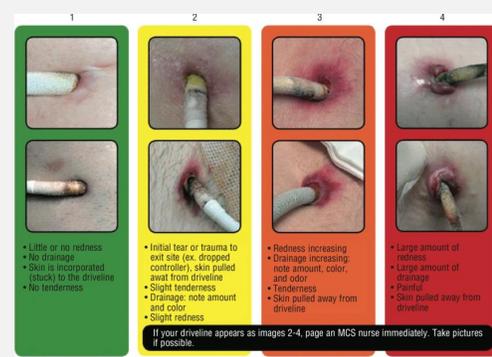
TRAITEMENT INFECTION POMPE?

- **Curatif: Transplantation cardiaque** « en urgence », vérifier sepsis contrôlé, demande de priorisation...
- Peu de place pour un changement de pompe dans la vraie vie.
- Palliatif: soins locaux, traitement médical suspensif (ATB à vie)

INFECTIONS DE CÂBLE



DANS LA VRAIE VIE

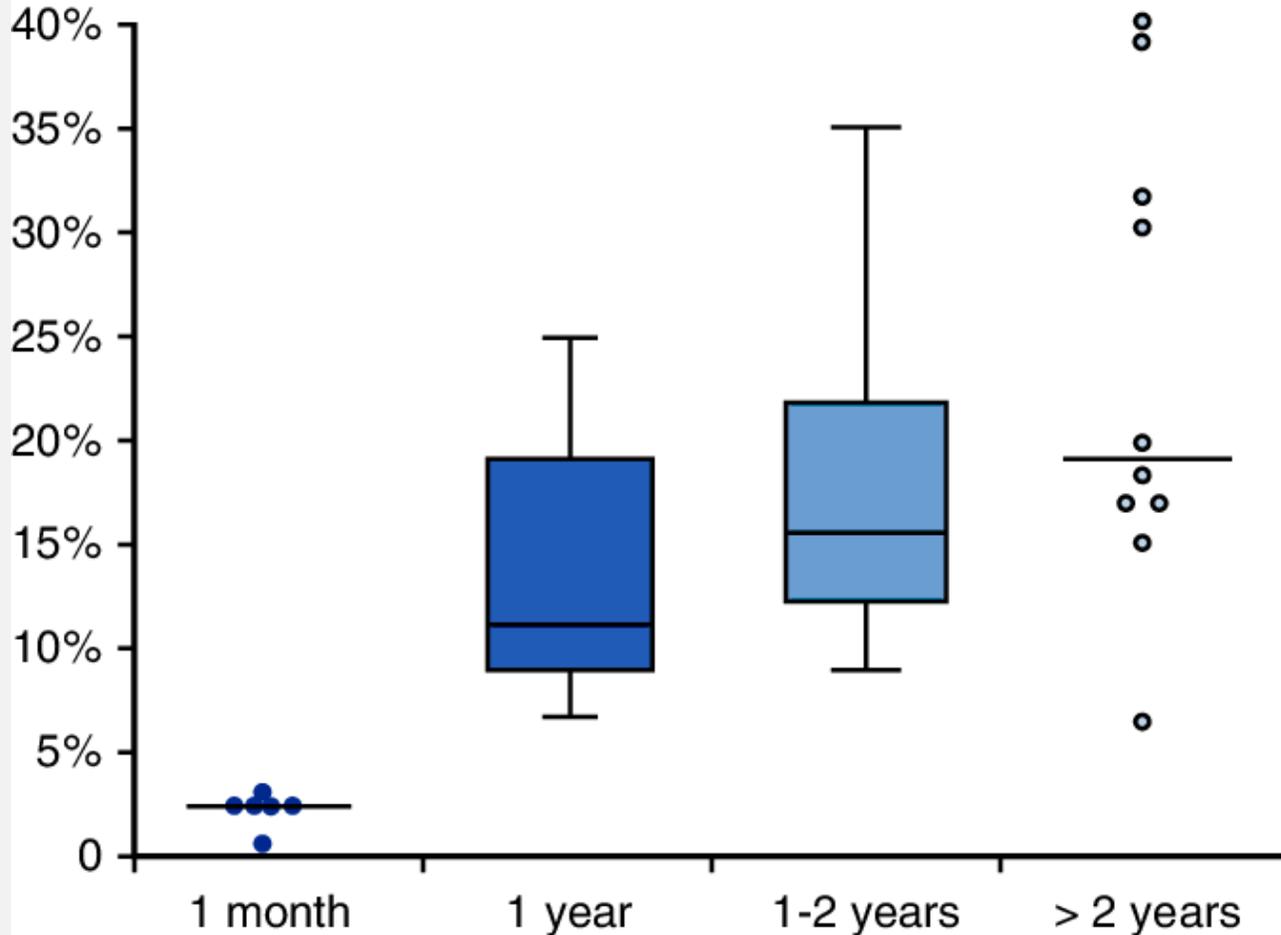




INCIDENCE



Driveline Infection Rates in Studies Using ISHLT Infection Classification



Characteristic	Result
Country of origin	
United States	88/132 (66.7)
Germany	11/132 (8.3)
Multiple	10/132 (7.6)
Japan	5/132 (3.8)
Turkey	5/132 (3.8)
United Kingdom	3/132 (2.3)
Italy	2/132 (1.5)
Netherlands	2/132 (1.5)
Canada	2/132 (1.5)
Denmark	2/132 (1.5)
Kazakhstan	1/132 (0.7)
Singapore	1/132 (0.7)
Study design	
Observational	118/132 (89.4)
Randomized	4/132 (3.0)
Interventional, non-randomized	10/132 (7.6)
Use of ISHLT infection classification	48/132 (36.4)
Pathogen reported	22/132 (16.7)
Follow-up duration reported	93/132 (69.7)
Patient age reported	97/132 (73.5)
Patient sex reported	119/132 (90.2)
Patient race reported	33/132 (25)
Device type	
HVAD	134.5 (70-268.5) (n = 96 studies)
HMII	44 (19-123) (n = 44 studies)
HM3	50 (12.5-101) (n = 12 studies)

The Society of Thoracic Surgeons Intermacs
2023 Annual Report: Focus on Magnetically
Levitated Devices

Check for updates



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Published by Elsevier Inc.

0003-4975/\$36.00
<https://doi.org/10.1016/j.athoracsur.2020.12.038>

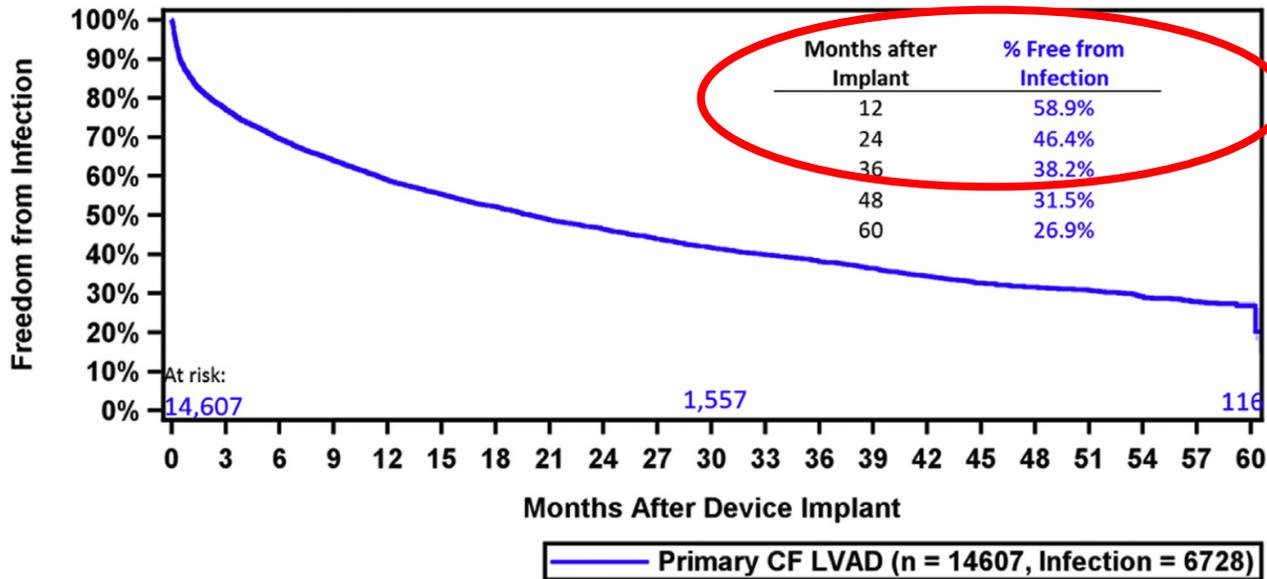
The Society of Thoracic Surgeons Intermacs
2020 Annual Report

Check for updates

As noted in **Figure 6D**, survival-free probability at 5 years from device-related infection was clinically similar between Mag-Lev (61%) and non-Mag-Lev devices in contemporary (64%) and historical (60%) eras. Freedom

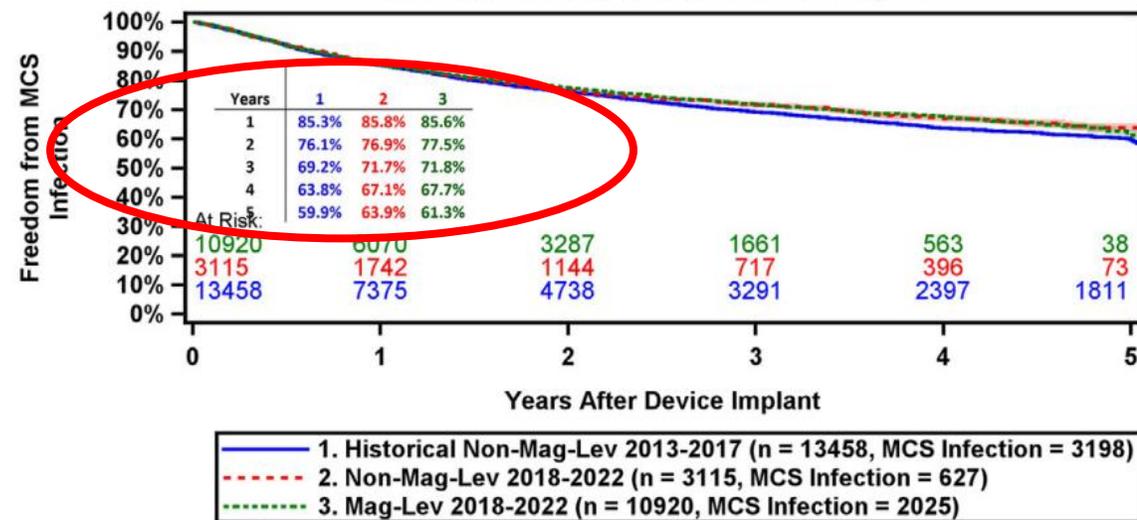
A

Time to First Infection (n=14,607)
Intermacs: January 1, 2015 - December 31, 2019



D

Time to First MCS Infection by Era and Device Type
Intermacs: January 1, 2013 - December 31, 2022



EN FRANCE?



2007-2012

Pitié/Rennes/Nantes

159 patients: 103 Pitié, 32 Nantes, 24 Rennes

36 pts (**22,6%**) at least one DI during the study period

Median delay DI: 2,9 M

Clinical Microbiology and Infection 23 (2017) 748–751

Contents lists available at [ScienceDirect](#)

 **Clinical Microbiology and Infection**

journal homepage: www.clinicalmicrobiologyandinfection.com

 **CMI**
CLINICAL
MICROBIOLOGY
AND INFECTION

 ESCMID

Original article

Left ventricular assist device-related infections: a multicentric study

S. Siméon¹, E. Flécher², M. Revest^{1,3}, M. Niculescu⁴, J.-C. Roussel⁵, M. Michel⁶,
P. Leprince⁷, P. Tattevin^{1,3,*}

Characteristics of patients with left ventricular assist device-related infection
(n = 36) by time of implantation

Demographic characteristics	
Age at implantation (years)	51 ± 11
Male	31 (86)
Co-morbidity	
Immunocompromised	4 (11)
Diabetes mellitus	4 (11)
Chronic alcoholism	12 (33)
Left ventricular ejection fraction (%)	22 ± 7
Body mass index (kg/m ²)	25.4 ± 4.9
Aetiology of heart failure	
Ischaemic cardiomyopathy	22 (61)
Dilated cardiomyopathy	14 (39)
Duration of heart failure	
<12 months	17 (48)
1–5 years	9 (26)
>5 years	9 (26)
Indication of LVAD implantation ^a	
Bridge-to-transplantation	22 (65)
Bridge-to-recovery	8 (23)
Destination therapy	4 (12)
INTERMACS profile ^b	
I	21 (58)
II	0 (0)
III	5 (14)
IV	3 (8)
V–VII	7 (20)
LVAD device	
Heartmate II (Thoratec)	33 (92)
Others ^c	3 (8)

EN FRANCE?

ASSIST-ICD Registry
 19 centers
 N= 652 patients
 DI : 30%
 Mean delay: 6,5M

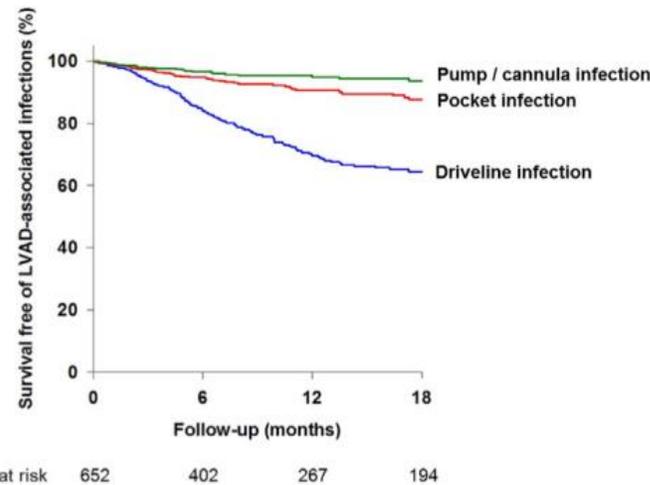
Risk factors and prognostic impact of left ventricular assist device–associated infections



Pierre Tattevin, MD PhD,^a Erwan Flécher, MD PhD,^a Vincent Auffret, MD,^a Christophe Leclercq, MD PhD,^a Stéphane Boulé, MD,^b André Vincentelli, MD PhD,^b Camille Dambrin, MD PhD,^c Clément Delmas, MD,^c Laurent Barandon, MD PhD,^d Vincent Veniard, MD,^d Michel Kindo, MD PhD,^e Thomas Cardi, MD,^e Philippe Gaudard, MD,^f Philippe Rouvière, MD,^f Thomas Sénage, MD,^g Nicolas Jacob, MD,^g Pascal Defaye, MD,^h Olivier Chavanon, MD PhD,^h Constance Verdonk, MD,ⁱ Marylou Para, MD,ⁱ Edeline Pelcé, MD,^j Vlad Gariboldi, MD PhD,^j Matteo Pozzi, MD,^k Daniel Grinberg, MD,^k Arnaud Savouré, MD,^l Pierre-Yves Litzler, MD PhD,^l Gerard Babatasi, MD PhD,^m Annette Belin, MD,^m Fabien Garnier, MD,ⁿ Marie Bielefeld, MD,ⁿ David Hamon, MD,^o Nicolas Lellouche, MD PhD,^o Louis Bernard, MD PhD,^p Thierry Bourguignon, MD,^p Romain Eschalier, MD PhD,^q Nicolas D'Ostrevy, MD,^q Jérôme Jouan, MD,^r Emilie Varlet, MD,^r Fabrice Vanhuysse, MD,^s Hugues Blangy, MD,^s Raphaël P. Martins, MD PhD,^a and Vincent Galand, MD^a *Remes, Lille, Toulouse, Bordeaux, Strasbourg, Montpellier, Nantes, Grenoble, Paris, Marseille, Lyon, Rouen, Dijon, Créteil, Tours, Clermont-Ferrand, and Nancy, France*

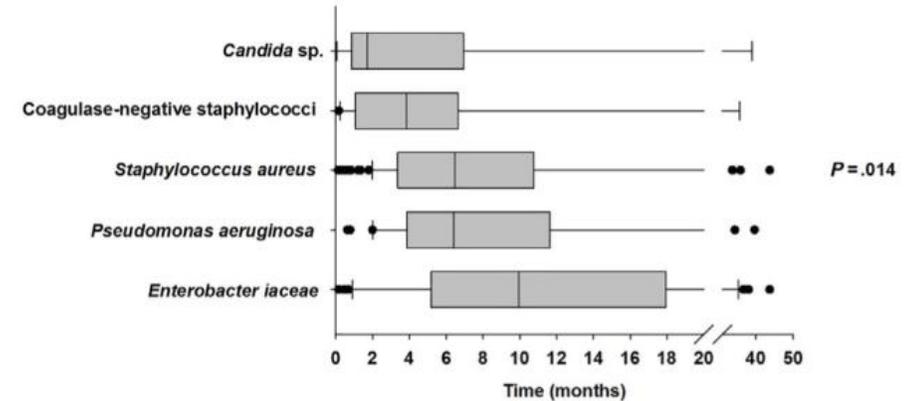


A



A, Survival free from driveline, pocket, or pump/cannula infection. The estimated survival rates at 12 months without driveline, pocket, and pump/cannula infections were 69.7% (64.8-74.1), 90.5% (87.0-93.1), and 95.4% (92.8-97.0), respectively. **B**, Time from LVAD implantation to infection for the main pathogens.

B



GRAVITÉ

Long-Term Survival on LVAD Support: Device Complications and End-Organ Dysfunction Limit Long-Term Success

Mortality Associated with Events Occurring within 1 Year of cfLVAD Support

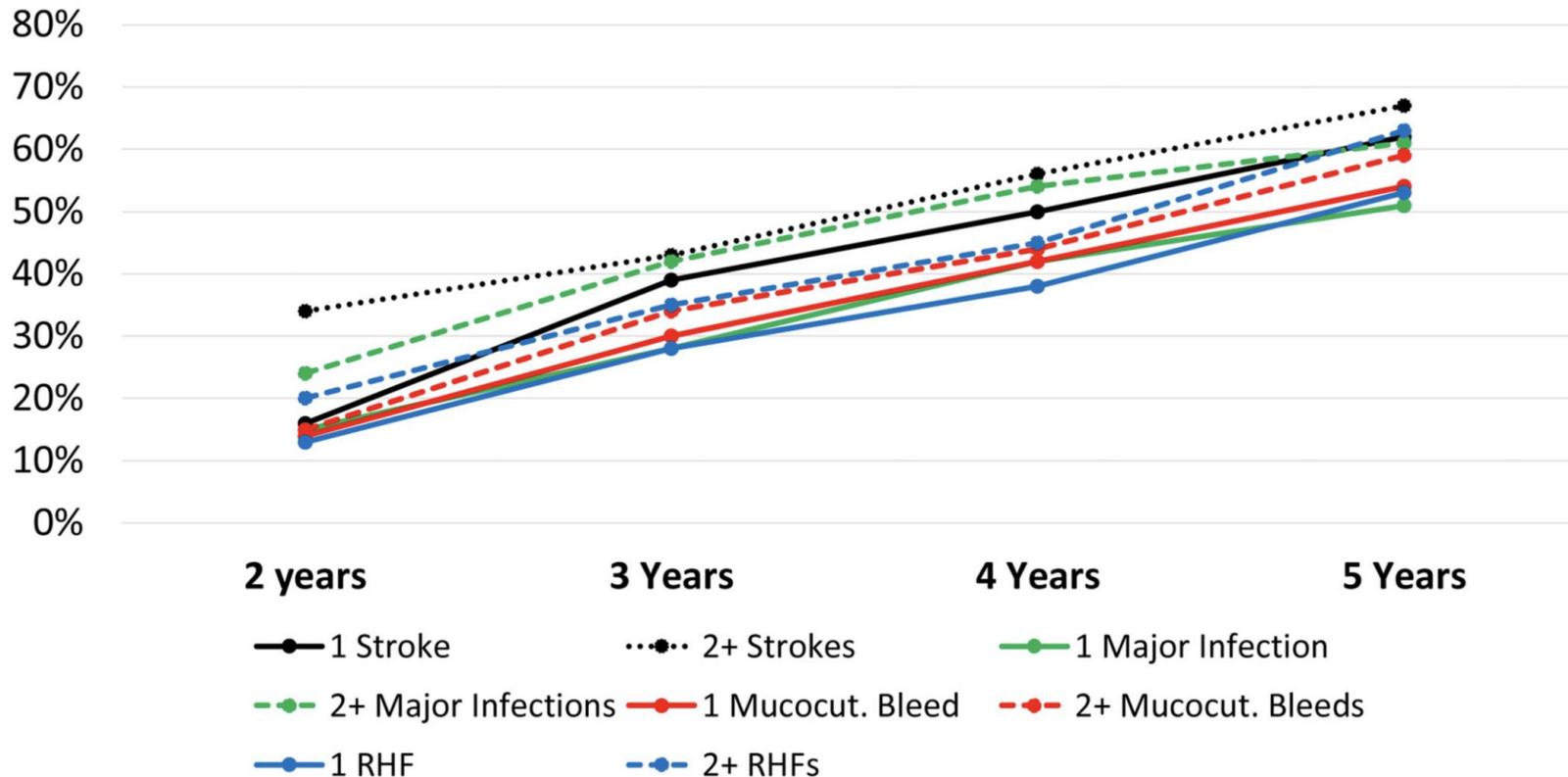
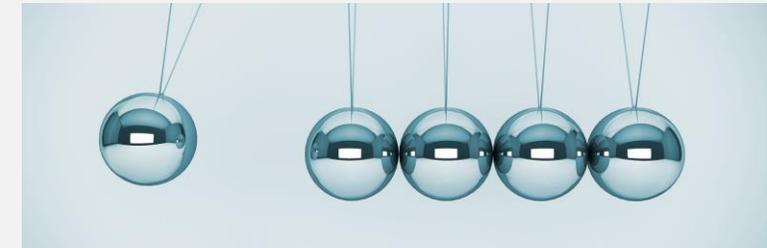


Figure 3. Impact of Adverse Events on Survival in those Alive and on cfLVAD Support at 1 Year.





Mars 2019

Réunion entre VAD coordinators, cardiac surgeons

Prevention and early treatment of driveline infections in ventricular assist device patients – The DESTINE staging proposal and the first standard of care protocol



Alexander M. Bernhardt, MD^{a,*}, Thomas Schlöglhofer, MSc^b, Volker Lauenroth^c, Florian Mueller^d, Marcus Mueller, MD^e, Alexandra Schoede^f, Christian Klopsch, MD, PhD^g, the Driveline Expert STaGing and carE DESTINE study group, a Ventricular Assist Device Driveline Infection Study Group

^a Department of Cardiovascular Surgery, University Heart and Vascular Center Hamburg, Martinstraße 52, 20246 Hamburg, Germany
^b Center for Medical Physics and Biomedical Engineering, Department of Cardiac Surgery, Medical University of Vienna, Ludwig Boltzmann Cluster for Cardiovascular Research, Waehringer Guertel 18-20, 1090 Vienna, Austria
^c Department for Mechanical Circulatory Support of VAD Patients, Heart & Diabetes Center, North Rhine-Westphalia, Georgstraße 11, 32545 Bad Oeynhausen, Germany
^d Department of Cardiac Surgery, Heart and Marfan Center, University of Heidelberg, Im Neuenheimer Feld 110, 69120 Heidelberg, Germany
^e Department of Cardiothoracic and Vascular Surgery, Deutsches Herzzentrum Berlin, Augustenburger Platz, 13353 Berlin, Germany
^f Department of Cardiothoracic, Transplantation and Vascular Surgery, Hannover Medical School, Carl-Neuberg-Straße 1, 30625 Hannover, Germany
^g Department of Cardiac Surgery, Rostock University Medical Center, Schillingallee 35, 10857 Rostock, Germany



8. Conclusion

This is the first international consensus document defining a standard for DLES care in VAD patients. We introduced a new definition for early stages of DLI. We provide a proposal for state of the art diagnostics and treatment, including follow-up of different stages of DLI, with emphasis on primary and secondary prevention of DLI. This may guide clinicians and caregivers to further improve outcomes of LVAD recipients.

STATE	State 0 - asymptomatic		State 1 - local wound healing disorder		State 2 - local infection		State 3 - systemic infection	State 4 - systemic infection with increased severity	State 5 - progressive systemic infection with deep DLI and/or signs for ascending infection
	0 a	0 b	1 a	1 b	2 a	2 b			
DEFINITION	<ul style="list-style-type: none"> Bland, unswollen, dry DLES No erythema No microbial detection at DLES No infection 	<ul style="list-style-type: none"> Clinically and visually unremarkable dry DLES No erythema Microbiologically positive smear of the DLES 	<ul style="list-style-type: none"> Dry DLES with erythema 	<ul style="list-style-type: none"> Wet DLES without erythema 	<ul style="list-style-type: none"> Local infection of DLES Erythema/pruritus and/or swelling No pyrexia No positive blood cultures No microbial detection at DLES 	<ul style="list-style-type: none"> Local infection of DLES Erythema/pruritus and/or swelling Pus No pyrexia No positive blood cultures Microbial detection at DLES 	<ul style="list-style-type: none"> Signs of systemic infection Erythema/pruritus Skin disruption and tenderness Significant amount of discharge (Pus) Pyrexia Positive blood cultures Microbial detection at DLES 	<ul style="list-style-type: none"> Signs of systemic infection Potential phlegmone Severe skin disruption and tenderness Significant amount of discharge (Pus) Bleeding from granulation site Positive blood cultures 	<ul style="list-style-type: none"> Signs of systemic infection Potential phlegmone Severe skin disruption and tenderness Significant amount of discharge (Pus) Bleeding from granulation site Positive blood cultures
DIAGNOSTICS & THERAPIES	<ol style="list-style-type: none"> Dressing schedule: Dressing change 1-2x weekly Dressing procedure: Standard Operating Procedure (SOP) of the implanting center Diagnostics: Photo documentation during dressing change Smear: on routine examination at VAD outpatient clinic Therapy: not required 	<ol style="list-style-type: none"> Dressing schedule: see state 0a Dressing procedure: see state 0a Diagnostics: see state 0a, additional information to VAD outpatient clinic and affected patient Smear: additional smear in VAD outpatient clinic upon DLES state change Therapy: increase awareness 	<ol style="list-style-type: none"> Dressing schedule: see state 0a Dressing procedure: SOP, additional application of bacteriostatic silver- or polyhexanid-containing material Diagnostics: see state 0a, additional laboratory diagnostics for systemic signs of infection, immediate presentation at a physician with VAD experience and timely outpatient follow-up after 1-2 weeks at a physician with VAD experience Smear: additional smear in VAD outpatient clinic upon DLES state change Therapy: see state 0b, additionally consider adjuvant therapy (e.g. cold plasma) 	<ol style="list-style-type: none"> Dressing schedule: Dressing change adjusted to degree of wetness (aim: dry exit site) Dressing procedure: see state 1a Diagnostics: see state 0a, additional laboratory diagnostics for systemic signs of infection, immediate presentation at a physician with VAD experience and timely outpatient follow-up after 1-2 weeks at a physician with VAD experience Smear: additional smear timely (after 1-2 weeks) at a VAD outpatient clinic Therapy: see state 0b 	<ol style="list-style-type: none"> Dressing schedule: see state 1b (aim: dry exit site) Diagnostics: see state 0a, additional laboratory diagnostics for systemic signs of infection and coagulation status, immediate presentation at VAD outpatient clinic and timely outpatient follow-up after 1-2 weeks at VAD outpatient clinic Smear: additional smear timely (after 1-2 weeks) at VAD outpatient clinic Therapy: see state 0b 	<ol style="list-style-type: none"> Dressing schedule: see state 1a Dressing procedure: see state 1a Diagnostics: see state 0a, additional laboratory diagnostics for systemic signs of infection and coagulation status, immediate presentation at VAD outpatient clinic and timely outpatient follow-up after 1-2 weeks at VAD outpatient clinic Smear: additional smear timely (after 1-2 weeks) at VAD outpatient clinic Therapy: see state 0b 	<ol style="list-style-type: none"> Dressing schedule: increase frequency Dressing procedure: see state 1a, optional coverage by abdominal binder Diagnostics: contact VAD outpatient clinic, hospitalization most likely required, laboratory diagnostics on dynamics of systemic signs of infection and coagulation status Smear: blood and deep wound cultures Therapy: initiation of calculated / targeted antibiotic therapy, consider silver nitrate for granulation tissue 	<ol style="list-style-type: none"> Dressing schedule: increase frequency Dressing procedure: see state 1a, optional coverage by abdominal binder Diagnostics: contact VAD outpatient clinic, hospitalization mandatory, laboratory diagnostics on dynamics of systemic signs of infection and coagulation status, consider PET-CT and TEE for evaluation of invasiveness of infection Smear: blood and deep wound cultures Therapy: initiation of intravenous calculated/targeted antibiotic therapy, surgical debridement and potential vacuum-assisted closure therapy 	<ol style="list-style-type: none"> Dressing schedule: see state 1a, optional coverage by abdominal binder Diagnostics: contact VAD outpatient clinic, hospitalization mandatory, laboratory diagnostics on dynamics of systemic signs of infection and coagulation status, consider PET-CT and TEE for evaluation of invasiveness of infection Smear: blood and deep wound cultures remain constantly positive Therapy: initiation of intravenous calculated / targeted antibiotic therapy, consider implantation of antibiotic beads, perform surgical debridement and vacuum-assisted closure therapy, consider pump replacement

Cite this article as: Koken ZO, Yalcin YC, van Netten D, de Bakker CC, van der Graaf M, Kervan U *et al.* Driveline exit-site care protocols in patients with left ventricular assist devices: a systematic review. *Eur J Cardiothorac Surg* 2021;60:506–15.

Driveline exit-site care protocols in patients with left ventricular assist devices: a systematic review

Zeliha Ozdemir Koken^{a,b}, Yunus C. Yalcin^{a,c}, Diana van Netten^d, Chantal C. de Bakker^a,
Maaïke van der Graaf^a, Umit Kervan^e, Nelianne J. Verkaik^d and Kadir Caliskan^{a,*}

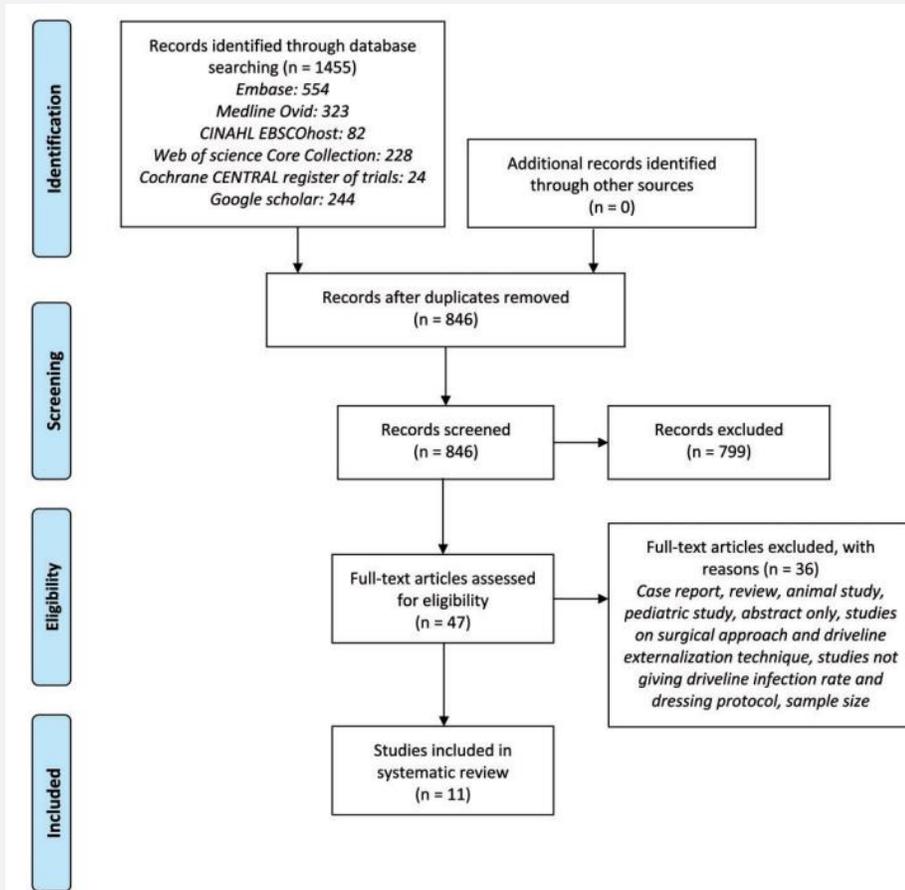
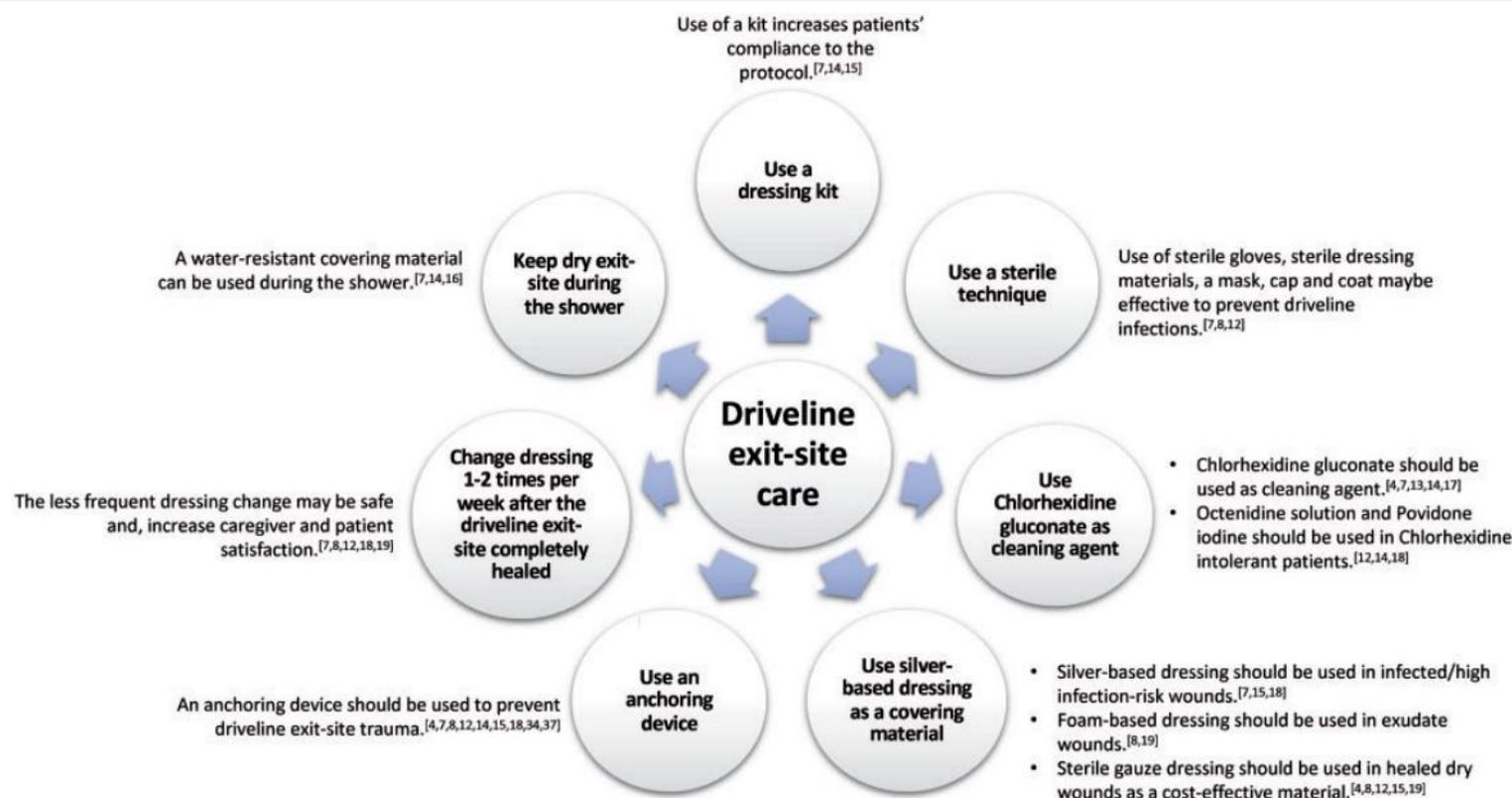
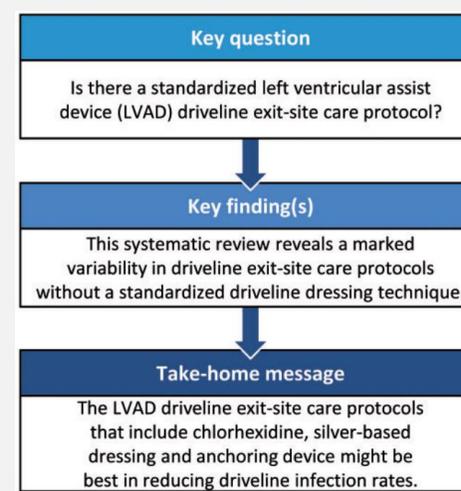


Figure 2: Recommendations based on the systematic review.

PRÉVENIR VAUT MIEUX QUE GUÉRIR!

- **Education thérapeutique +++**
- Réfection pansement appropriée: technique, matériel, produits
- Correction des facteurs de risque: diabète, corticothérapie, insuffisance rénale, obésité...
- Attention sélection des patients
- ATB prophylaxie à l'implantation
- Ne pas implanter en contexte septique
- Attention aux implantations / explantations / chgt sondes de PM-DAI
- Portfolio, photos, télésurveillance
- FDR principal: temps passé sous IVAD!

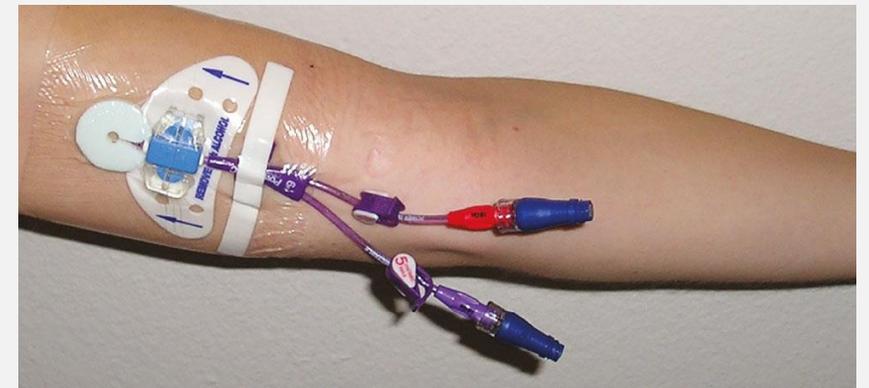
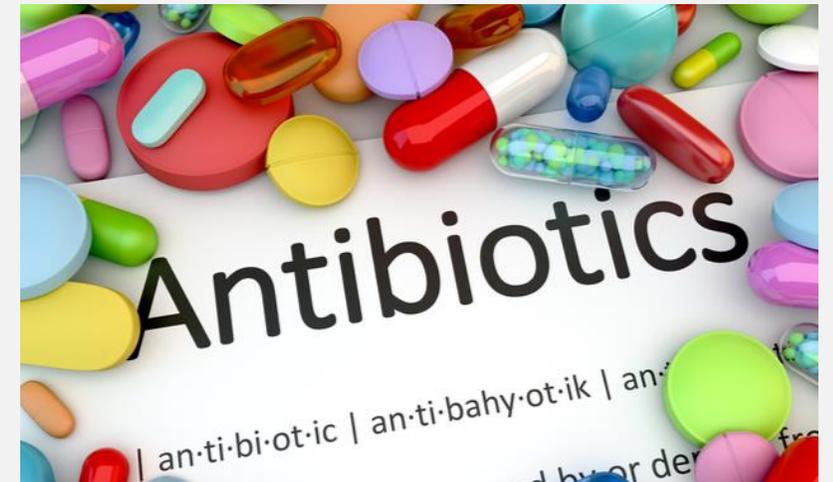


TRAITEMENT MÉDICAL (TOUJOURS)

- **Collaboration avec Maladies infectieuses**
- Prélèvements bactériologiques: local, hémocultures
- Soins locaux: consultation plaies et cicatrisations
- ATB thérapies orales
- ATB thérapies IV et PICC lines
- Rechercher/éliminer une infection généralisée/systemique/pompe



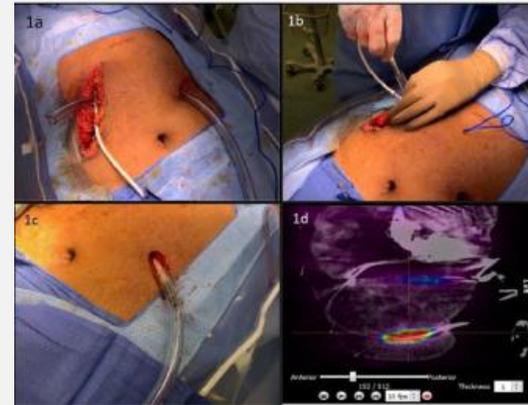
SOINS
INFIRMIERS



TRAITEMENT CHIRURGICAL (PARFOIS)



Transplantation cardiaque



Mise à plat, système ortholav, transposition de cable



AUTRES POSSIBILITÉS: UN AVIS?

Interactive CardioVascular and Thoracic Surgery 19 (2014) 523–525
doi:10.1093/icvts/ivu195 Advance Access publication 11 June 2014

CASE REPORT – ADULT CARDIAC

Late driveline left ventricular assist device infection treated with frozen-and-thawed allogeneic platelet gel

Francesco Formica^{a*}, Paolo Perseghin^b, Antonio Cirò^c and Giovanni Paolini^a

Ventricular Assist Device Driveline Infection: Treatment With Platelet-Rich Plasma

Federica Jiritano, MD, Giuseppe Filiberto Serraino, MD, Michele Rossi, MD, Andrea Dominijanni, MD, Adalgisa Brescia, MD, and Attilio Renzulli, MD, PhD

Cardiac Surgery Unit, Magna Graecia University of Catanzaro, and Immunohaematology and Transfusion Medicine Unit, Pugliese-Ciaccio Hospital, Catanzaro, Italy

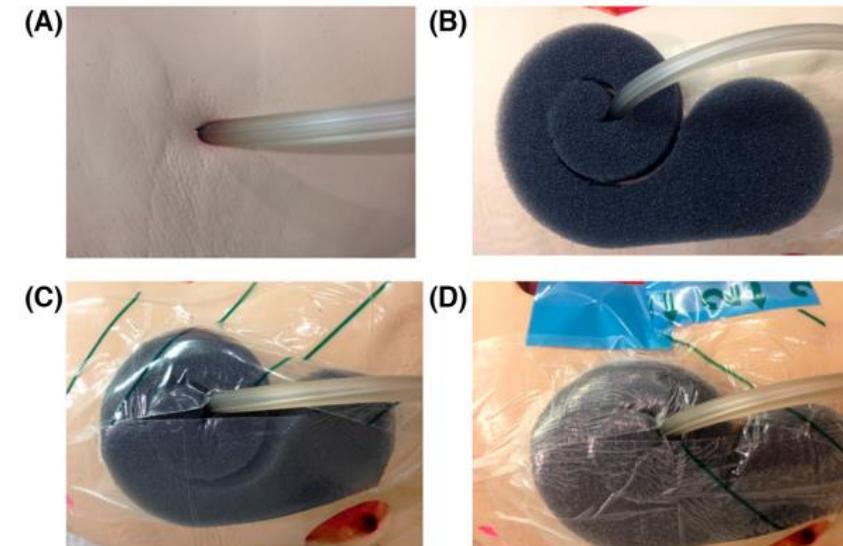
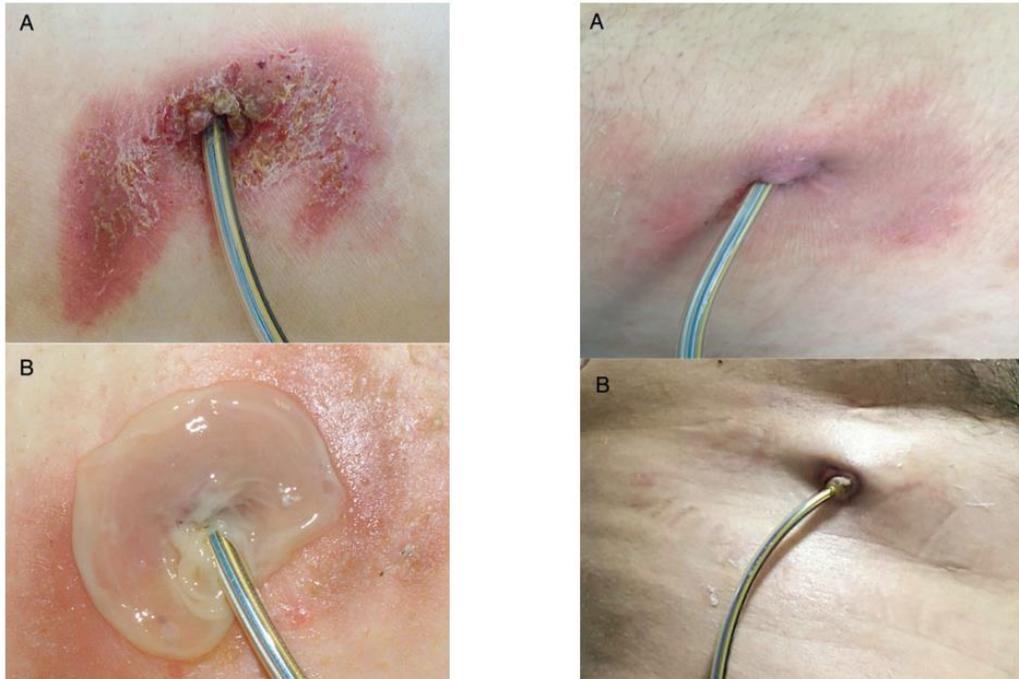
Received: 13 May 2022 | Revised: 10 September 2022 | Accepted: 15 October 2022
DOI: 10.1111/aor.14440

MAIN TEXT

Artificial Organs WILEY

Prophylactic negative pressure wound therapy is not effective for preventing driveline infection following left ventricular assist device implantation

Masaki Tsuji¹ | Nobutaka Kakuda¹ | Chie Bujo^{1,2} | Akihito Saito¹ | Junichi Ishida¹ | Eisuke Amiya^{1,2} | Masaru Hatano^{1,3} | Asako Shimada⁴ | Hiroko Imai⁴ | Mitsutoshi Kimura⁵ | Masahiko Ando⁵ | Osamu Kinoshita⁵ | Haruo Yamauchi⁵ | Issei Komuro¹ | Minoru Ono⁵



CONCLUSIONS

- Complication (très et trop) fréquente
- Impact sur la survie
- Impact sur la qualité de vie
- Prévenir vaut mieux que guérir, sélection candidats
- Travail en équipes multidisciplinaires (Maladie Infectieuses +++)
- Mais, tant qu'il y aura un câble...



TRAVAIL EN ÉQUIPE!



ENQUÊTE EN FRANCE

- Absence de consensus
- Objectif: Recenser les pratiques
- Pour discuter harmonisation des pratiques!

ENQUÊTE SUR LES PRATIQUES CONCERNANT LA RÉALISATION DU PANSEMENT DE DRIVELINE ABDOMINALE CHEZ LE PATIENT IMPLANTE D'UNE ASSISTANCE CARDIAQUE MONOVENTRICULAIRE GAUCHE

CHU de Rennes - Service Assistance Cardiaque, Juin 2022

L'infection de sortie de câble abdominal (Driveline) est une complication redoutée et fréquente chez les patients implantés d'une assistance circulatoire mécanique mono ventriculaire gauche.

Les soins apportés à la gestion de la ligne percutanée sont essentiels dans la prévention de cette complication.

Des recommandations concernant la détection précoce et les stratégies à adapter en fonction des stades d'infection de Driveline existent sur le sujet (Bernhard et al - 2019).

Cependant, aucun consensus ne permet de définir à ce jour le matériel, la fréquence de réfection ni la méthode à privilégier pour réaliser le pansement de Driveline.

Les pratiques peuvent différer d'un centre à l'autre, c'est ce que nous souhaitons évaluer au moyen de ce questionnaire.

Vos réponses doivent être le reflet de votre pratique. Les centres seront anonymisés à l'analyse des résultats

Nous vous remercions chaleureusement pour votre participation.

Nous sommes disponibles pour répondre avec plaisir à vos éventuelles questions à l'adresse mail suivante :

le.assistance.cardiaque@chu-rennes.fr ou au 02.99.28.24.54 de 9h à 17h du lundi au vendredi

SOMMAIRE DU QUESTIONNAIRE

- 1- GENERALITES
- 2- PANSEMENT DE DRIVELINE
 - A- Dans le cas d'un suivi simple
 - B- Dans le cas d'un suivi complexe
 - C- Gestion spécifique du câble
- 3- EDUCATION THERAPEUTIQUE



36^{èmes} JOURNÉES de la Pitié
18 - 20 OCTOBRE 2023 • PARIS
Auditorium Adicare • Institut de Cardiologie



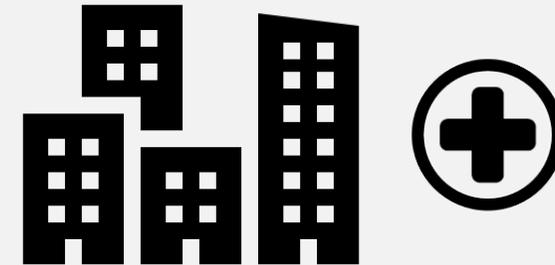
METHODOLOGIE

- **Questionnaire** format PDF, mailing + relances informatiques
- **22 centres de chirurgie cardiaque ADULTE** avec activité d'assistance cardiaque (France)
- **Durée: 3 mois** (juin 2022-septembre 2022)
- **LVAD** avec **sortie driveline abdominale uniquement**
- 61 questions
- **Résultats anonymisés**
- **Formulaire en 3 parties:**
 - **1- Généralités sur les centres**
 - **2- Pansement de Driveline**
 - **3- Education thérapeutique**



GENERALITES

- 100% de réponses (**22 centres**)
- **69%** des formulaires complétés par **IDE**
- Expérience des centres en assistance cardiaque: **10-20 ans (64%)**
- **Volume d'activité** des centres équitablement représenté :



Nombre total de patients LVAD implantés
(depuis le début de l'activité d'assistance)

25-50 : 6 (27%)

50-100 : 7 (32%)

>100 : 8 (36%)

<25 : 1 (5%)

DISCUSSION



- Juin 2023
- Réunion Experts / Spécialistes LVAD: chirurgiens, IDE VAD, cardiologues, anesthésistes réanimateurs et infectiologues
- Recherche d'un consensus sur prise en charge infections de driveline
- Perspectives futures: proposer à la SFCTCV les propositions du groupe de travail (automne 2023)

ORIFICE SORTIE DRIVELINE

- Pas sous l'ombilic
- Privilégier trajet long et sous aponévrotique
- Repérage (si possible) en préop, patient en station debout
- Silicone du câble à la peau
- Plan cutané aussi étanche que possible
- Penser à l'orientation pour permettre socle de fixation

REFECTION PANSEMENT EN RÉANIMATION ET HOSPITALISATION

- Disposer d'un protocole pansement institutionnel écrit et validé
- Par un personnel formé à ce soin
- Fréquence à la discrétion des équipes mais au moins 1 fois par semaine
- En réa/USI: gants non stériles pour retirer pansement souillé, puis gants stériles ou pinces stériles pour réfection du pansement
- Port du masque pour le soignant recommandé en postopératoire précoce (réanimation)



COLLABORATION ET AVIS INFECTIEUX

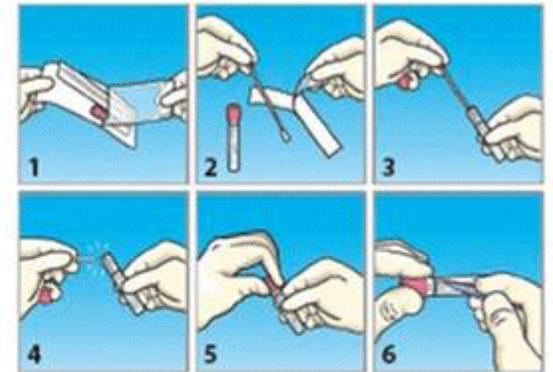


- Il est recommandé de collaborer avec les maladies infectieuses pour les infections de LVAD
- Si prélèvement local bactériologique (écouvillon, ponction ou autre), il doit avoir lieu après nettoyage antiseptique de la peau (colonisation cutanée naturelle)

1. Ecouvillon
COPAN ESWAB



2. Manipulation du tube et de l'écouvillon



SUIVI PANSEMENT SIMPLE

- Au moins une fois par semaine
- Après chaque douche
- Télésurveillance orifice sortie possible (attention protection des données)
- Il n'y a pas lieu de faire des hémocultures et/ou un prélèvement bactériologique en absence de symptômes et de signes locaux
- Réfection du pansement simple possible par le patient (éducation thérapeutique +++)
- Nettoyage simple du câble si pas d'infection (savon doux)
- Désinfection du câble recommandé pour réfection juste après la douche

SUIVI PANSEMENT COMPLEXE

- Avis recommandé si:
 - - *écoulement sale, ou louche, ou qui apparait*
 - - *et/ou signes généraux*
 - - *Et/ou signes inflammatoires locaux ou biologiques*
- Hémocultures: OUI (2 paires, 4 flacons, 10cc/flacon)
- Nettoyage ET désinfection du câble recommandés
- Utilité d'un avis plaies et cicatrisation pour préciser protocole soins de pansement
- Soins locaux par professionnel (IDE)

MAIS AUSSI...

- Si dépilation, privilégier tondeuse électrique et sans s'approcher trop près de l'orifice (quelques cms de sécurité)
- La douche est possible
- Réfection post douche: désinfection locale recommandé
- Discuter avec infectiologues et hygiénistes sur le choix des produits désinfectants parmi ceux disponibles
- Il est recommandé d'avoir une fixation permanente, dès la sortie du bloc, du câble proche de l'orifice de sortie
- Fixation du câble dans l'axe de sortie de la driveline
- PET scanner possible en cas d'infection de câble avérée justifiant d'une hospitalisation
- Sepsis sur LVAD: rechercher une endocardite (ETO)
- Décolonisation fosses nasales et épiderme 5 Jours avant implantation si possible
- Discuter ATB prophylaxie si implantation chez un patient déjà hospitalisé, en réanimation.

CONCLUSIONS

- Complication (très et trop) fréquente
- Impact sur la survie
- Impact sur la qualité de vie
- Prévenir vaut mieux que guérir
- Travail en équipes multidisciplinaires (Maladie Infectieuses +++)
- Mais, tant qu'il y aura un câble...



TRAVAIL EN ÉQUIPE!



MERCI DE VOTRE ATTENTION