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Guidelines EACTS - STS para o Manejo das Doenças Agudas e Crônicas da Aorta

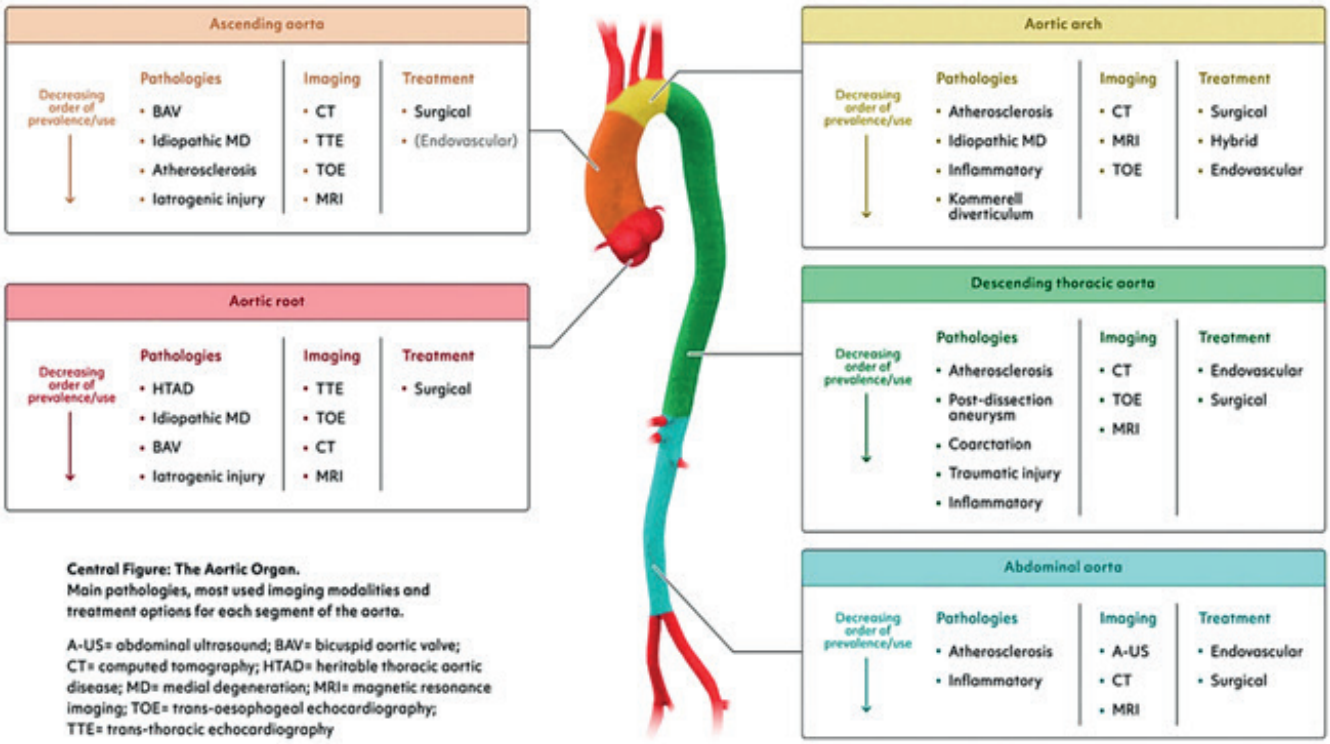
EACTS/STS Guidelines for Diagnosing and Treating Acute and Chronic Syndromes of the Aortic Organ

Clinical practice guidelines summarize and assess all relevant evidence on a specific topic at the time of their creation, with the goal of assisting physicians in selecting the best management strategies for individual patients with a given condition. These guidelines take into consideration the impact on patient outcomes as well as the risk–benefit ratio of different diagnostic or therapeutic methods. Although these guidelines do not replace textbooks, they complement them and cover topics pertinent to contemporary clinical practice. They serve as a vital tool to aid physicians in making decisions in their daily practice. However, in essence, although these recommendations serve as a valuable resource to guide clinical practice, their application should always be tailored to the needs of the individual patient. Each patient's case is unique, presentingits own set of variables and circumstances. The guidelines are a tool designed to support, but not supersede, the decisionmaking process of physicians, based on their knowledge, expertise and understanding of their patients' individual situations. Furthermore, these guidelines should not be interpreted as legally binding documents. The legal responsibilities of healthcare professionals remain firmly grounded in applicable laws and regulations, and the guidelines do not alter these obligations.

The European Association for Cardio-Thoracic Surgery (EACTS) and The Society of Thoracic Surgeons (STS) selected a task force composed of professionals working in the field of this particular pathological condition. In an effort to maintain transparency and uphold integrity, all experts involved in the development and review of these guidelines provided declarations of interest, detailing any possible conflicts. Any changes to these declarations during the writing process had to be immediately reported to the EACTS and the STS.

The EACTS and the STS provided all financial support for this task force, with no involvement from the healthcare industry. Building upon this collaborative work, the clinical practice guidelines committees of the EACTS and the STS oversaw the creation, refinement, and approval of these new guidelines. A comprehensive review of the draft was carried out by an external panel of experts in the field. Their feedback informed the necessary revisions. After this thorough review and updating process, the final document received approval from all the experts on the task force and the governing bodies of the EACTS and the STS. This approval made it possible for the guidelines to be published simultaneously in the European Journal of Cardio-Thoracic Surgery and The Annals of Thoracic Surgery.

These guidelines, endorsed by both the EACTS and STS, represent the official viewpoint on this topic. They show a commitment to ongoing improvement, as regular updates will be made to keep the guidelines relevant and useful in the constantly evolving field of clinical practice.



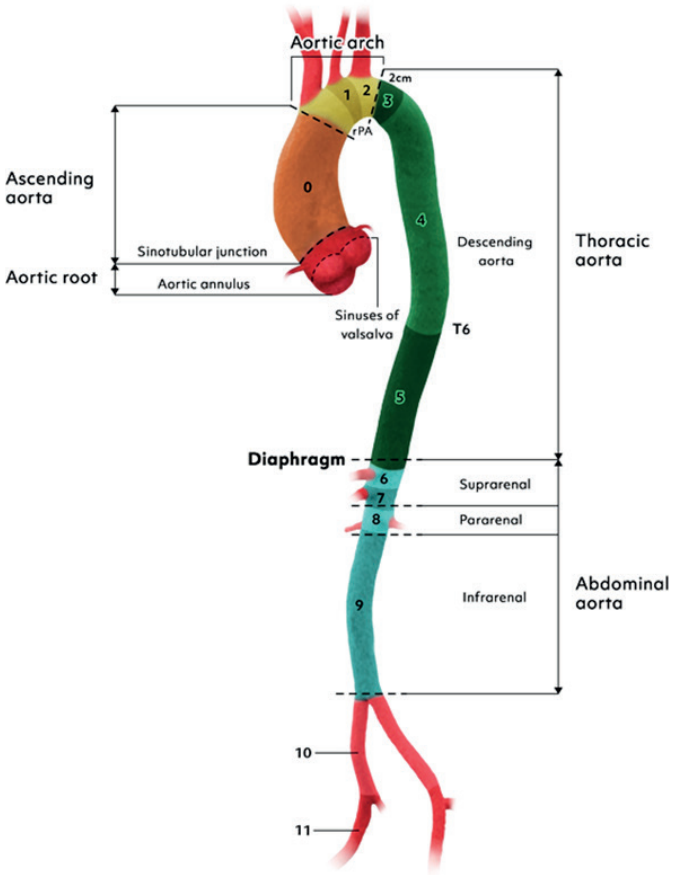
Central Figure: The Aortic Organ.
Main pathologies, most used imaging modalities and treatment options for each segment of the aorta.

A-US= abdominal ultrasound; BAV= bicuspid aortic valve; CT= computed tomography; HTAD= heritable thoracic aortic disease; MD= medial degeneration; MRI= magnetic resonance imaging; TOE= trans-oesophageal echocardiography; TTE= trans-thoracic echocardiography

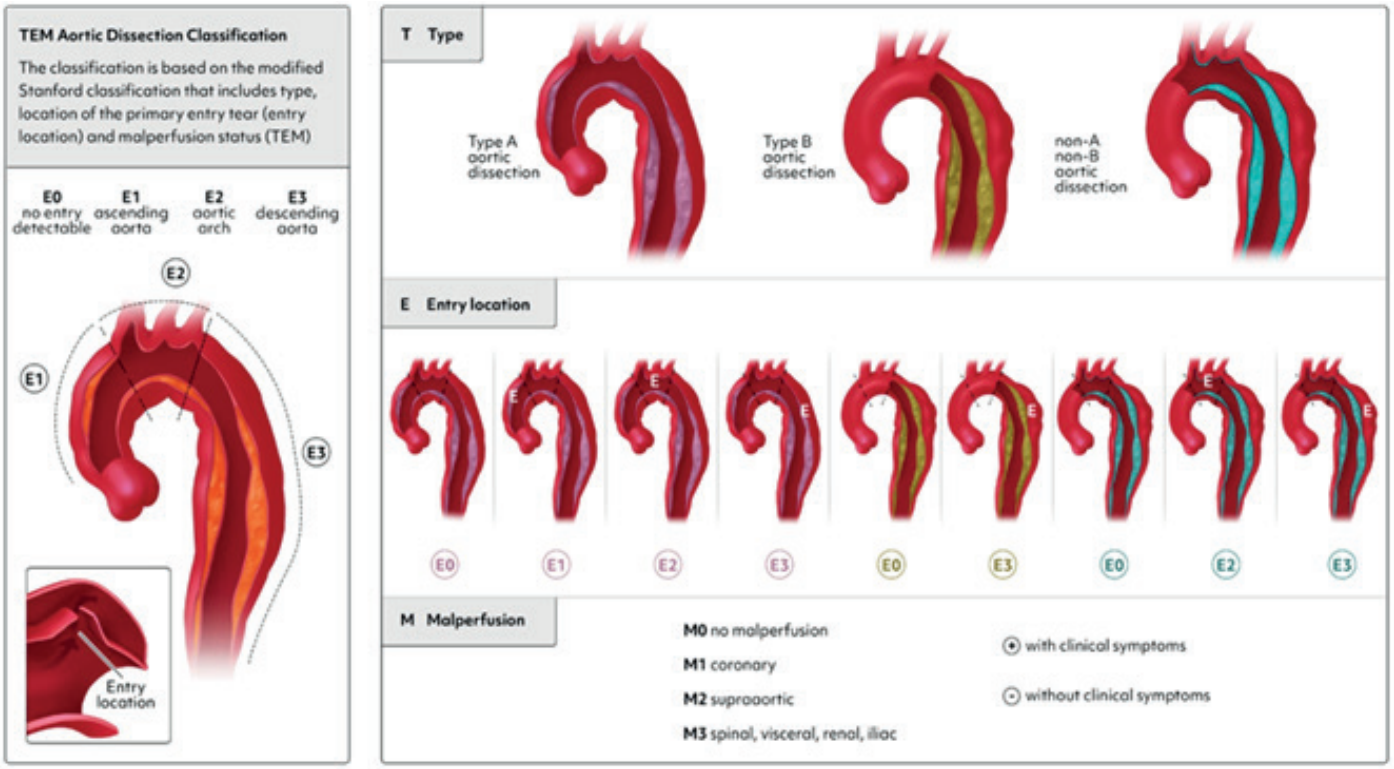
Recommendation Table 2: Nomenclature and risk stratification

Recommendations	Class[a]	Level[b]	Ref[c]
In patients with aortic dissection, Ishimaru zones are recommended for use as a reporting standard of disease extent.	I	C	-
The use of the TEM[d] classification should be considered in any acute aortic syndrome to determine the type of disease and an initial treatment strategy.	IIa	C	-
The use of the GERAADA[e] score should be considered in patients with acute type A aortic dissection undergoing surgery to determine 30-day mortality.	IIa	C	-

Ishimaru Zones



TEM classification: type, entry, malperfusion.



Eur J Vasc Endovasc Surg. 2024 Feb 8:S1078-5884(24)00163-1.
doi: 10.1016/j.ejvs.2024.02.004

Estudo Multicêntrico Europeu Revisita o uso de Tubos de Pericárdio Bovino para Substituição da Aorta, em Infecção de Prótese

Physician Made Bovine Pericardial Tube Grafts in Aortic Infection: A European Multicentre Study

OBJECTIVES

This study examines outcome and durability of physician made bovine pericardial tube grafts in aortic infections in all anatomical locations.

METHODS

This was a retrospective and prospective international multicentre study. Peri-operative and long term outcomes of patients undergoing in situ aortic reconstruction for native or graft infections with physician made bovine pericardial tube grafts between January 2008 and December 2020 in four European tertiary referral centres were analysed. The primary endpoint was recurrent aortic infection. Secondary endpoints were persistent infection, aortic re-operation for infection, graft related complications, and death.

RESULTS

One hundred and sixty eight patients (77% male, mean age 67±11 years) were identified: 38 (23%) with native and 130 (77%) with aortic graft infection. The thirty day mortality rate was 15% (n=26) overall, 11% (n=4), and 17% (n=22) for native and aortic graft infections, respectively (P=.45). Median follow up was 26 months (interquartile range [IQR] 10, 51). Estimated survival at one, two, three, and five years was 64%, 60%, 57%, and 50%, and significantly better for native (81%, 77%, 77%, and 69%) than for graft infections (58%, 55%, 51%, and 44%; P=.011). Nine patients (5.3%) had persistent infection and 10 patients (6%) had aortic re-infection after a median of 10 months (IQR 5, 22), resulting in an estimated freedom from re-infection at one, two, three, and five years of 94%, 92%, 90%, and 86%. Estimated freedom from graft complications at one, two, three, and five years was 91%, 89%, 87%, and 87%.

CONCLUSIONS

This multicentre study demonstrates low re-infection rates when using physician made bovine pericardial tube grafts, comparable to those of other biological grafts. The rate of graft complications, mainly anastomotic aneurysms and stenoses, was low, while graft degeneration was absent. Physician made bovine pericardial tube grafts are an excellent tool for in situ reconstruction in the setting of native aortic infection or aortic graft infection.

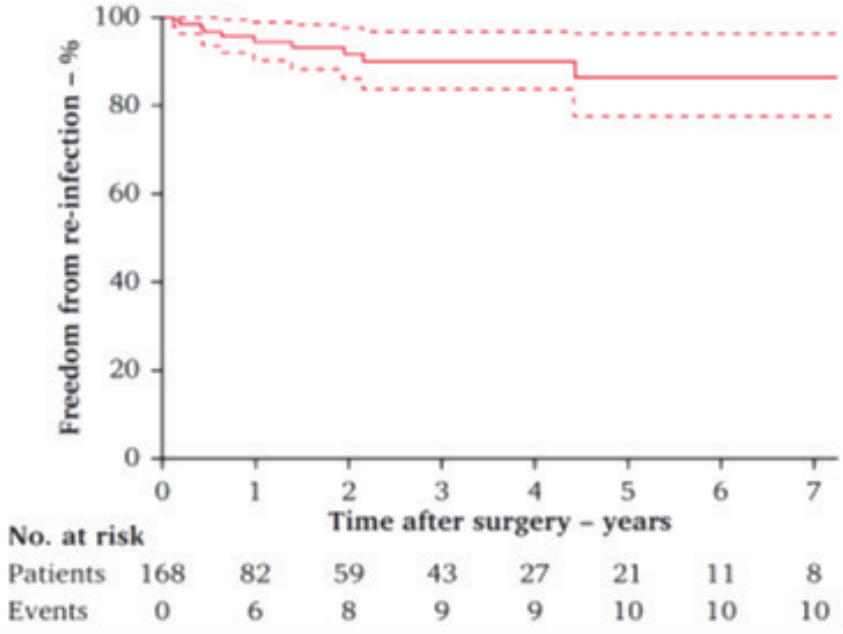


Figure 3. Cumulative Kaplan–Meier estimate of 168 patients treated with physician constructed bovine pericardial grafts showing freedom from aortic (xenograft) re-infection. The dotted lines represent the 95% confidential interval.

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doi: 10.1093/ejcts/ezad308.

A escolha da Prótese Valvar Aórtica em Pacientes abaixo de 50 anos: Resultado Tardio do Estudo AUTHEARTVISIT

Revisiting aortic valve prosthesis choice in patients younger than 50 years: 10 years results of the AUTHEARTVISIT study

OBJECTIVE

This population-based cohort study investigated mid-term outcome after surgical aortic valve replacement with a bioprosthetic or mechanical valve prosthesis in patients aged <50 years in a European social welfare state.

METHODS

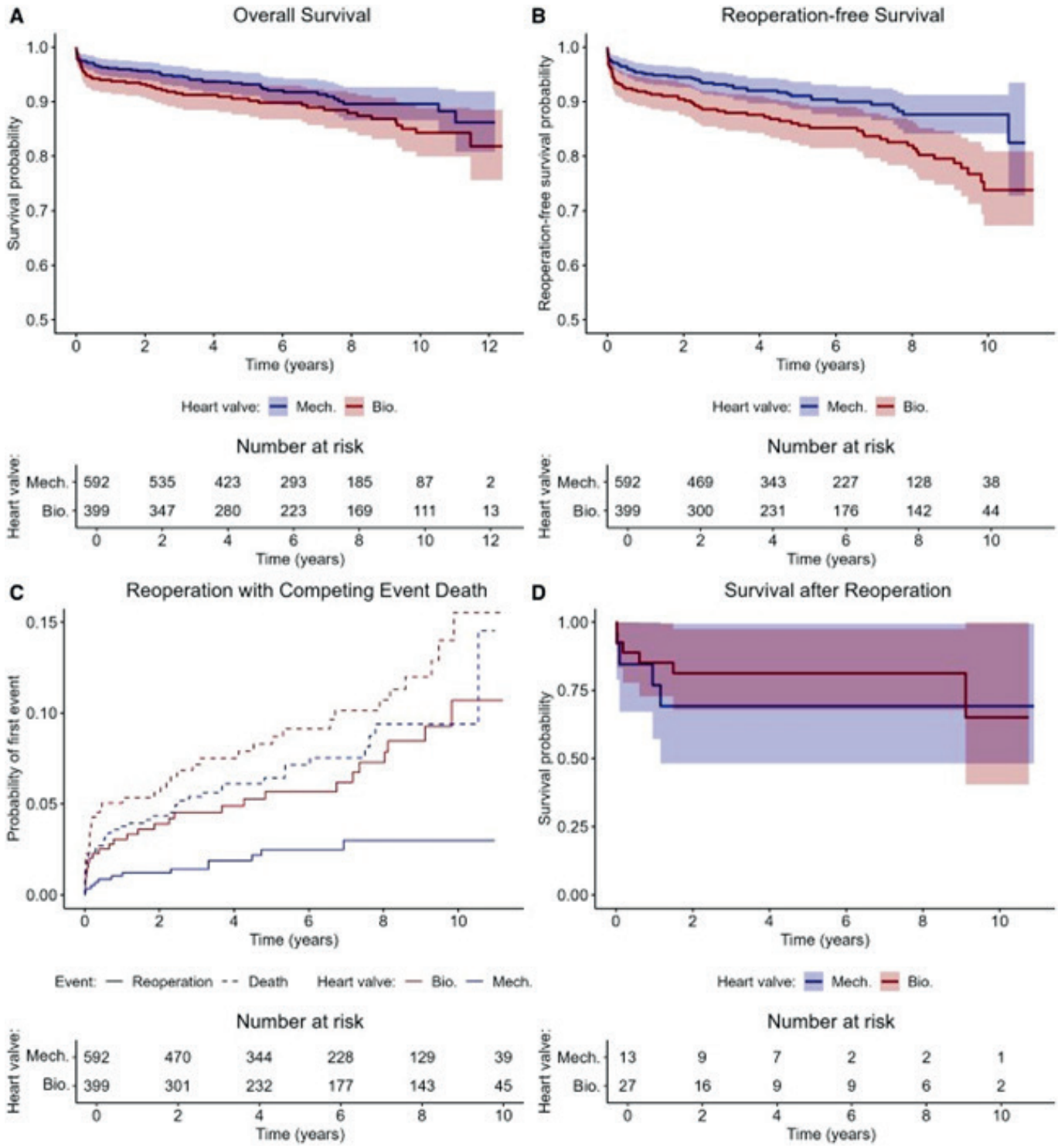
We analysed patient data from the main social insurance carriers in Austria (2010-2020). Subsequent patient-level record linkage with national health data provided patient characteristics and clinical outcome. Survival, reoperation, myocardial infarction, heart failure, embolic stroke or intracerebral haemorrhage, bleeding other than intracerebral haemorrhage and major adverse cardiac events were evaluated as outcomes.

RESULTS

A total of 991 patients were analysed. Regarding demographics, no major differences between groups were observed. Multivariable Cox regression revealed no significant difference in overall survival (P=0.352) with a median follow-up time of 6.2 years. Reoperation-free survival was decreased (hazard ratio = 1.560 [95% CI: 1.076-2.262], P = 0.019) and the risk for reoperation was increased (hazard ratio = 2.770 [95% CI: 1.402-5.472], P=0.003) in patients who received bioprostheses. Estimated probability of death after reoperation was 0.23 (CL: 0.08-0.35) after 2 years and 0.34 (CL: 0.06-0.53) after 10 years over both groups. Regarding further outcomes, no significant differences between the two groups were observed.

CONCLUSIONS

In patients below 50 years of age receiving aortic valve replacement, implantation of bioprostheses when compared to mechanical heart valve prostheses was associated with a significantly higher rate of reoperations and reduced reoperation-free survival. Nevertheless, we could not observe a difference in overall survival. However, long-term follow-up has to evaluate that a significantly lower rate of reoperations may translate in consistently improved long-term survival.


A
Overall Survival
Survival probability
1.0
0.9
0.8
0.7
0.6
0.5
0
2
4
6
8
10
12
Time (years)
Heart valve: Mech. Bio.
Number at risk
Heart valve:
Mech. 592 535 423 293 185 87 2
Bio. 399 347 280 223 169 111 13
0 2 4 6 8 10 12
Time (years)
B
Reoperation-free Survival
Reoperation-free survival probability
1.0
0.9
0.8
0.7
0.6
0.5
0
2
4
6
8
10
Time (years)
Heart valve: Mech. Bio.
Number at risk
Heart valve:
Mech. 592 469 343 227 128 38
Bio. 399 300 231 176 142 44
0 2 4 6 8 10
Time (years)
C
Reoperation with Competing Event Death
Probability of first event
0.15
0.10
0.05
0.00
0
2
4
6
8
10
Time (years)
Event: Reoperation Death Heart valve: Bio. Mech.
Number at risk
Heart valve:
Mech. 592 470 344 228 129 39
Bio. 399 301 232 177 143 45
0 2 4 6 8 10
Time (years)
D
Survival after Reoperation
Survival probability
1.00
0.75
0.50
0.25
0.00
0
2
4
6
8
10
Time (years)
Heart valve: Mech. Bio.
Number at risk
Heart valve:
Mech. 13 9 7 2 2 1
Bio. 27 16 9 9 6 2
0 2 4 6 8 10
Time (years)

N Engl J Med. 2024 Feb 1;390(5):442-454.
doi: 10.1056/NEJMra2308353

Up Date 2024 – Excelente Revisão em Dispositivos Eletrônicos Implantáveis

Cardiac Implantable Electronic Devices

Cardiac implantable electronic devices (CIEDs) constitute a major breakthrough in the management of heart rhythm disorders. These devices largely include bradycardia pacemakers, biventricular pacemakers, and implantable cardioverter–defibrillators (ICDs). In the United States, more than 400,000 CIEDs are implanted every year.

The increasing number of patients with a CIED has made it necessary for all clinicians to have a basic understanding of what these devices do, the evidence supporting their use, their possible contribution to the overall clinical presentation, and the consideration of how they should be managed when surgery, a nonsurgical procedure, magnetic resonance imaging (MRI), or radiation therapy is planned.

The field of CIEDs has evolved substantially in the past two decades, and evidence is accumulating with respect to which patients benefit most from different methods of pacing and various types of ICD. Despite these major advances, several gaps in knowledge remain. In relation to pacing, we

need to determine both how to optimize the effectiveness and safety of dual-chamber, leadless pacemakers and whether leadless pacemakers could be developed that would allow conduction system pacing.

More data are needed on how the effectiveness and safety of His or left bundlebranch area pacing compare with those of biventricular pacing. This question is being assessed by the Left vs. Left pragmatic randomized trial, which is enrolling patients with an LVEF of 50% or less and either a wide QRS complex (≥130 msec) or anticipated pacing of 40% or more.

More data are needed on the role of ICDs for primary prevention in patients with nonischemic cardiomyopathy; the outcomes of subcutaneous

ICDs in patients not included or not well represented in prior studies, such as patients with hypertrophic cardiomyopathy; and the outcomes of extravascular ICDs. Other data gaps concern the identification of patients who are most likely to benefit from an ICD among all ICD-eligible patients and the development of methods to iden tify and treat patients at high personal risk for sudden death from cardiac causes who are not identified by current ICD guidelines.

Filling these gaps will enable clinicians to deliver personalized care, ensuring that patients receive the type of CIED that will provide the greatest benefit.

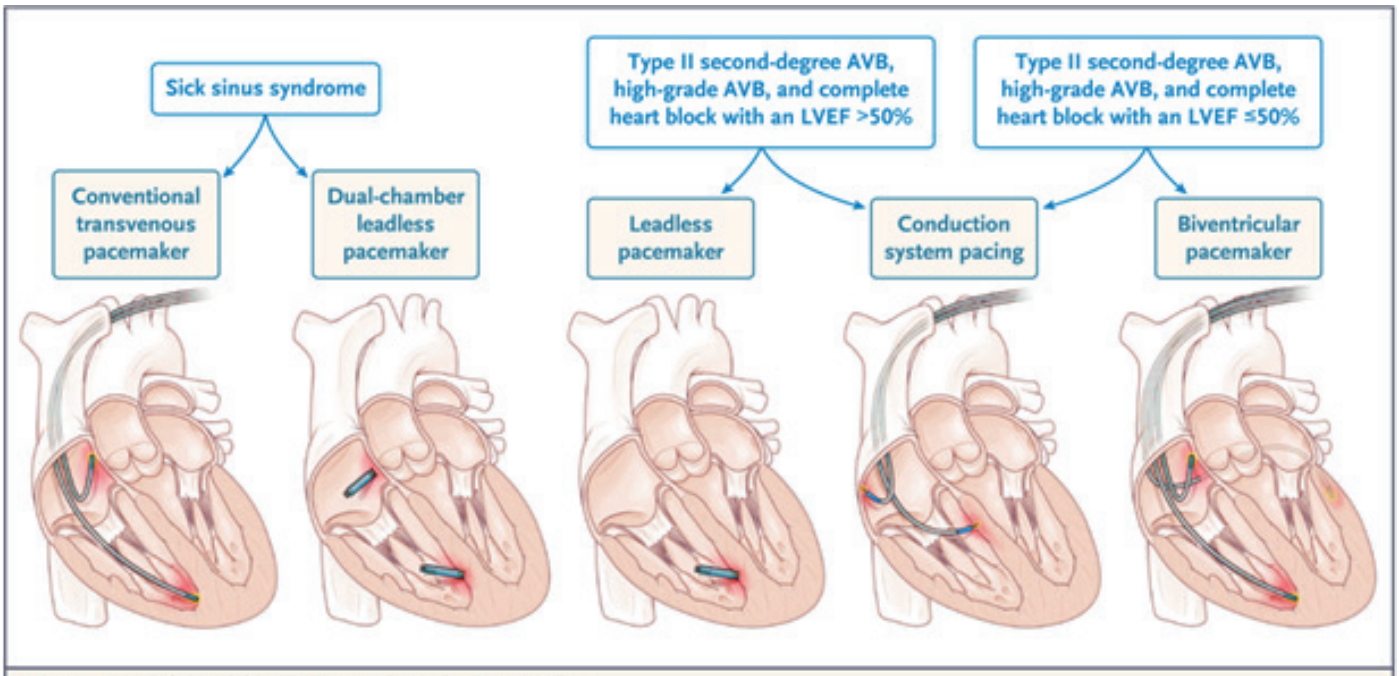
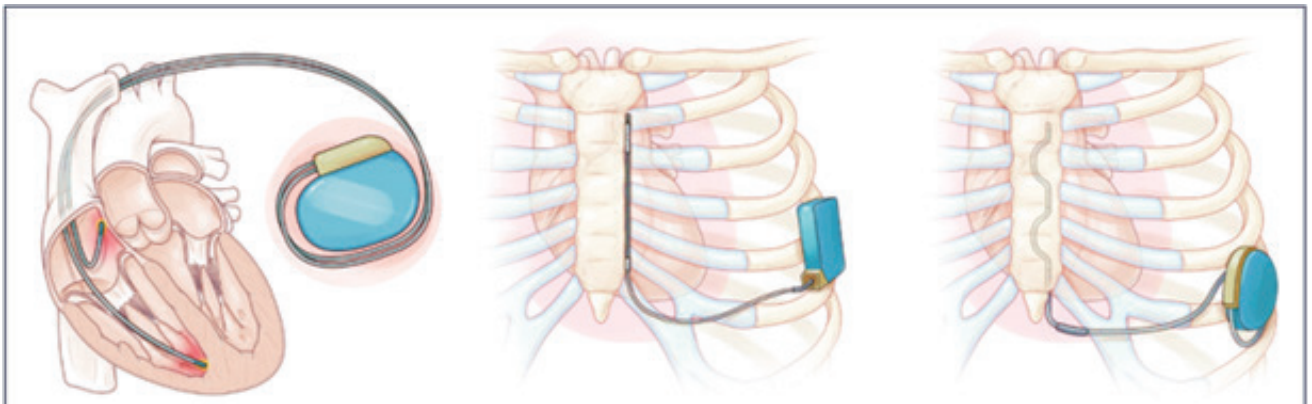


Figure 2. Selecting a Pacemaker Type for a Given Patient.

A conventional transvenous pacemaker has a right ventricular lead in an apical or septal position (and excludes conduction system pacing). Adapted from Jarcho,[52] Reynolds et al.,[24] and Knops et al.[25] AVB denotes atrioventricular block, and LVEF left ventricular ejection fraction.



Conventional Transvenous ICD

Pros:
- Longer duration of use
- Supported by the strongest evidence
- Capable of bradycardia, antitachycardia, and, in some, biventricular pacing
- Longest battery life

Cons:
- Higher risk of infection
- Higher risk of lead-related complications

Subcutaneous ICD

Pros:
- Lower risk of infection
- Lower risk of lead-related complications

Cons:
- Largest size
- Shorter battery life
- Not capable of bradycardia, antitachycardia, or biventricular pacing

Extravascular ICD

Pros:
- Lower risk of lead-related complications
- Capable of bradycardia and antitachycardia pacing

Cons:
- No clinical practice data (not FDA-approved for clinical use in the United States)
- Higher risk of inappropriate shocks
- Logistic difficulties in aligning electrophysiologist's availability with thoracic surgeon's availability

Figure 3. Pros and Cons of Various ICD Types.

Adapted from Bardy et al.[60] and Friedman et al.[58] ICD denotes implantable cardioverter–defibrillator.

Eur Heart J. 2023 Sep 14;44(35):3323-3326.
doi: 10.1093/eurheartj/ehad490.

Infecção em Marcapassos e Cardioversores: em que Momento e sob quais Riscos retirar o Sistema?

Cardiac device infection: removing barriers to timely and adequate treatment

Infection related to cardiac implantable electronic devices (CIEDs) occurs in 1%–3% of cases during the device lifetime.1These include pocket infection, systemic infection, and infective endocarditis, and although uncommon, they have a considerable impact, including hospitalization, 1-year mortality rates as high as 25%, and increased healthcare costs.2The incidence of CIED infection has been rising over the past 20 years,3underscoring the need for both prophylactic measures and early diagnosis and management of suspected infections.

Prevention of device infection should focus on the actionable risk factors outlined in the European Heart Rhythm Association (EHRA) guidance summary. Higher risks of pocket CIED infections have been associated with CIED reoperations, young age, and a more complex type of CIED, whereas systemic infections have been associated with risk factors for bacteraemia such as severe renal insufficiency, erysipelas, dermatitis, and lupus erythematosus. The risk of CIED infection is not limited to the first year after device implantation; in fact, 30%– 70% of device infections occur beyond 12 months.

The cornerstone of management of CIED infections is extraction of the complete system (excluding superficial wound infections, which are not device infections). The EHRA international clinical practice recommendations for the diagnosis and management of CIED infections (2021) emphasized the need for prompt removal of the device and all associated components.

Failure to diagnose and refer cases to centres with expertise in CIED infection and complete lead extraction is associated with poorer patient outcomes and increased healthcare costs.

The use of antimicrobial therapy alone for CIED infection has been associated with increased mortality at 30 days [hazard ratio (HR) 6.97; 95% confidence interval (CI) 1.36–35.60] and at 1 year (HR 1.61; 95% CI 0.37–6.86).1

In contrast, early removal was associated with lower mortality risk compared with delaying or not extracting the device.

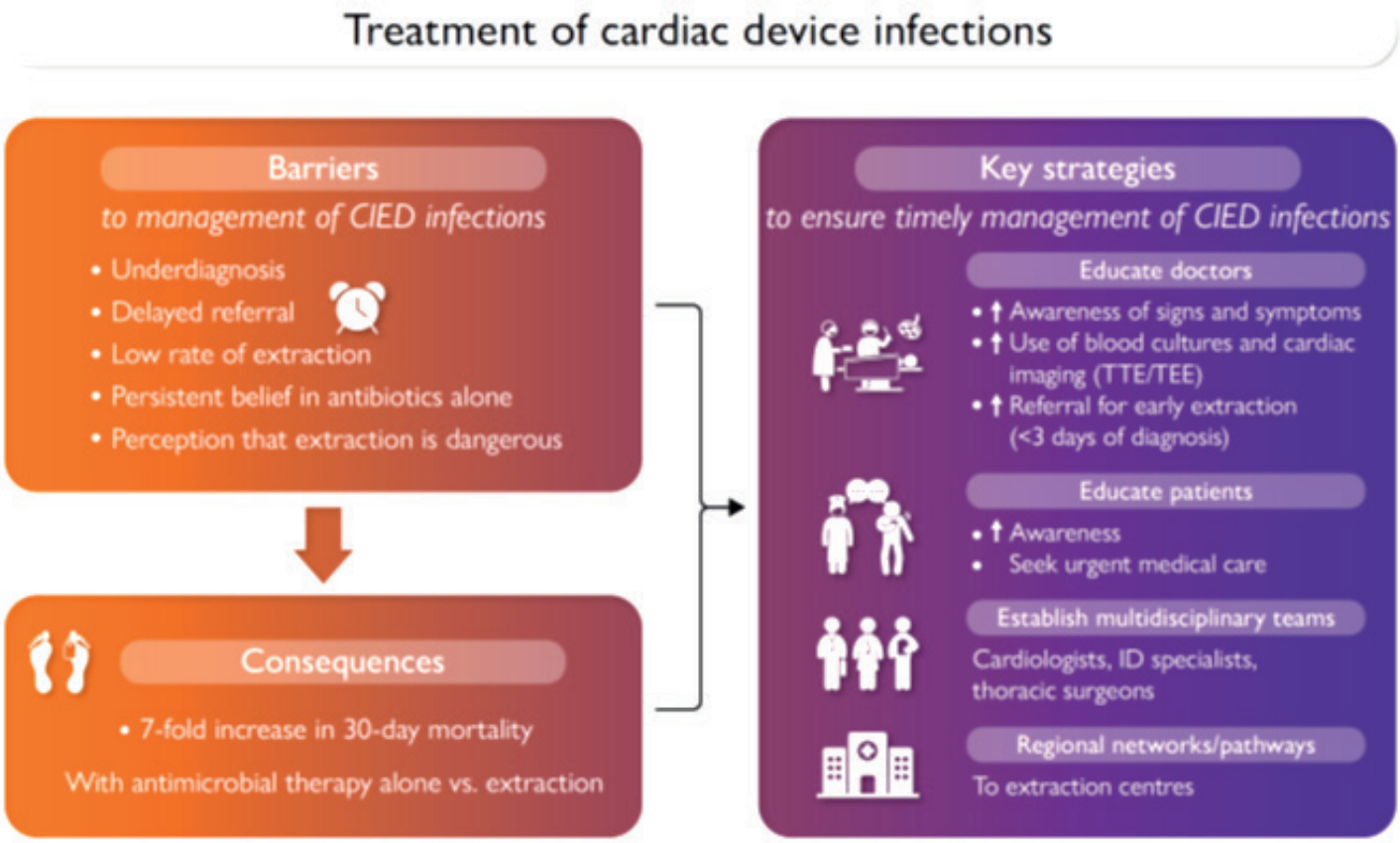
In a nationwide cohort study, only 11.5% of 25.303 patients with CIEDs and endocarditis, admitted between 2016 and 2019, were managed with device extraction.

Extraction was associated with a lower risk of mortality [odds ratio (OR) 0.47; 95% CI 0.37–0.60] compared with no extraction. In another cohort study, the 1-year risk of mortality was significantly lower (HR 0.35; 95% CI 0.16–0.75; P = .007) with immediate extraction (4 days) compared with delayed device removal (16 days).1 However, these data are observational with inherent limitations.

A key component in successfully addressing the gaps related to the diagnosis and optimal management of CIED infection is patient involvement. Patients should be thoroughly educated to better recognize the signs and symptoms of infection, to seek medical care if an infection is suspected, and to routinely inform healthcare workers that they have a CIED (particularly if presenting to the emergency department).

Results of a 2021 patient survey conducted by the Arrhythmia Alliance underscore the lack of engagement between healthcare professionals and patients regarding potential infection. A striking 61% of patient respondents stated they were unaware of the signs and symptoms of

CIED infection, and 64% stated that they had not been informed about the infection risk by their physician when receiving the device.
The importance of cardiologists in patient education and management of CIED infections is highlighted by the fact that 45% of patients said they responded to infection symptoms by calling a cardiologist, whereas only 36% stated they went to the emergency department.
In early 2022, the American Heart Association-led CIED Infection Summit identified tailored education materials as an actionable solution to improve communication between patients and clinicians and to facilitate engaged and well-informed CIED infection care (https:// www.heart.org/en/professional/quality-improvement/national-cied- infection-initiative/). Following device implantation, both written and oral instructions should be given to patients and should include a clear description of the signs and symptoms of infection, the daily examination of their incision site, and proper wound care. The potential for infection during the long term should also be discussed. Patient education materials related to CIED infection are available from a number of credible websites including the EHRA, Arrhythmia Alliance, British Heart Foundation, and Heart Rhythm Society.



Ann Thorac Surg 2024;117:669-89.
https://doi.org/10.1016/j.athoracsur.2023.12.006

Consenso ERAS/STS para Manejo Intensivo em Cirurgia Cardíaca

Perioperative Care in Cardiac Surgery: A Joint Consensus Statement by the Enhanced Recovery After Surgery (ERAS) Cardiac Society, ERAS International Society, and The Society of Thoracic Surgeons (STS)

Enhanced Recovery After Surgery (ERAS) programs have been shown to lessen surgical insult, promote recovery, and improve postoperative clinical outcomes across a number of specialty operations. A core tenet of ERAS involves the provision of protocolized evidence-based perioperative interventions. Given both the growing enthusiasm for applying ERAS principles to cardiac surgery and the broad scope of relevant interventions, an international, multidisciplinary expert panel was assembled to derive a list of potential program elements, review the literature, and provide a statement regarding clinical practice for each topic area. This article summarizes those consensus statements and their accompanying evidence. These results provide the foundation for best practice for the management of the adult patient undergoing cardiac surgery.

An aging patient population coupled with more sophisticated surgical technique has dramatically increased the complexity of perioperative care for
the cardiac surgical patient. Although their origins can be traced back to fast-track cardiac surgery, which involved a similar bundled approach to care, presentday a patient-centered, multidisciplinary pathway centered on elements shown to improve surgical outcome and contribute to high-value care.

Despite a body of literature replete with examples of successful ERAS programs in noncardiac surgery, their application to the cardiac surgical setting is in its relative infancy. As outlined, most of the measures included in this document are based on a low- or moderate-level of evidence, and additional high-quality studies are warranted to tailor additional guidance in the future.

The care elements assessed and reported on in this consensus statement can provide a foundation for ERAS program development to ensure optimal care for the cardiac surgical patient.

TABLE 1 Summary of Statements and Level of Evidence

Statement	Level of Evidence
Patient engagement is improved through the incorporation of shared decision-making principles.	Low
Program implementation and sustainment is facilitated through the establishment of a multidisciplinary team, including a dedicated coordinator, as an extension of the Heart Team.	Moderate
Routine auditing and evaluation of perioperative process measure adherence and clinical outcomes is a necessary component of high-quality perioperative care.	Moderate
Multifaceted patient screening and risk assessment improves the informed consent process and allows for advanced perioperative planning.	Moderate
Multicomponent prehabilitation may be considered to optimize patients prior to nonurgent cardiac surgery.	Low
Limiting nil per oz status for clear liquids (>2 hours before surgery) is reasonable after assessment of potential risk factors for aspiration.	Low
Transesophageal echocardiography is encouraged in patients with moderate or high risk of perioperative morbidity or mortality.	Moderate
Mechanical ventilation with lung-protective strategies is associated with improved mechanics and fewer pulmonary complications.	High
The role of mechanical ventilation during cardiopulmonary bypass is uncertain.	Moderate
Pulmonary artery catheters use in low-risk patients or procedures incurs greater health care resource utilization without improving morbidity or mortality.	Moderate
Central nervous system monitoring may provide an early indication of neurologic risk, but additional study is necessary to identify strategies to prevent and mitigate injury.	Moderate
Standardized risk factor assessment and prophylaxis has been shown to prevent postoperative nausea and vomiting.	Moderate
Goal-directed perfusion may play a role in preventing organ injury associated with cardiopulmonary bypass.	Low
Structured strategies to facilitate extubation within 6 hours of surgery have been shown to be safe and potentially hasten recovery after elective procedures.	Moderate
Highly selective intraoperative or immediate postoperative extubation may be appropriate for patients undergoing low-risk cardiac surgery.	Low
Routine screening for and, where appropriate, the use of a comprehensive treatment care bundle can reduce the incidence and severity of postoperative acute kidney injury.	Moderate
Early postoperative ambulation and upper extremity exercise is well tolerated and associated with hastened recovery.	Moderate
Goal-directed fluid and hemodynamic therapy can guide perioperative resuscitation and prevent postoperative organ injury.	Moderate
A multimodal approach reduces reliance on opioid-based analgesia and optimizes perioperative pain management.	Moderate
Chest wall regional analgesia can be an effective component of a multimodal approach to perioperative pain management.	Moderate
Blood product utilization and associated outcomes are optimized through the implementation of a comprehensive patient blood management program.	Moderate
Postoperative atrial fibrillation is optimally addressed through the use of a multifaceted prevention strategy.	Moderate
Routine use of a systematic delirium screening tool and nonpharmacologic strategies aid the identification and prevention of postoperative delirium.	High
The bundled application of evidence-based best practices has been shown to prevent surgical site infection.	High

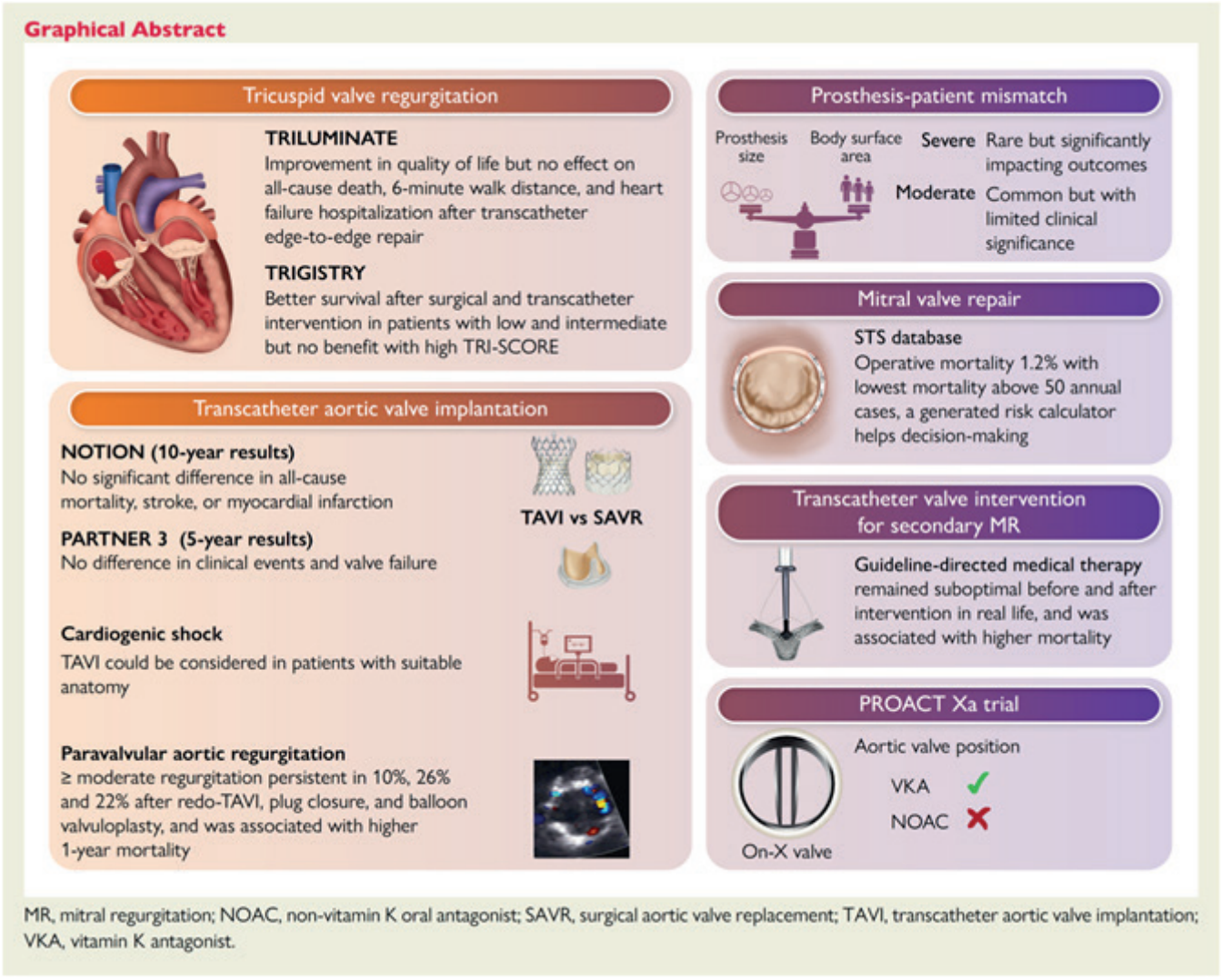
European Heart Journal 2024;45(11);872-75.
https://doi.org/10.1093/eurheartj/ehae090

Os 10 Melhores Trabalhos em 2023 sobre Doença Valvar

The year in cardiovascular medicine 2023: the top 10 papers in valvular heart disease

Like last year, we had the difficult task to select the 10 best papers on valvular heart disease published in 2023. We restricted our selection to publications in the New England Journal of Medicine, Journal of the American Medical Association, Lancet, European Heart Journal, Circulation, Journal of the American College of Cardiology, and JAMA Cardiology. The 10 papers were chosen based on a consensus between the three authors, weighting quality, potential impact on clinical practice, and future research as well as expected interest for our readership (Graphical Abstract). We acknowledge that many more would have deserved to be mentioned.

Graphical Abstract



MR, mitral regurgitation; NOAC, non-vitamin K oral antagonist; SAVR, surgical aortic valve replacement; TAVI, transcatheter aortic valve implantation; VKA, vitamin K antagonist.