PLACE 2026
PLATFORM OF LABORATORIES FOR ADVANCES IN CARDIAC EXPERIENCE

CONGRESSO
ROMA, 25 - 27 Giugno 2026

Luncheon panel: deep insight leadless pacing

LEADLESS ATRIAL PACING: FROM CLINICAL EVALUATION TO THERAPEUTIC DECISION

Dr. Danilo Ricciardi
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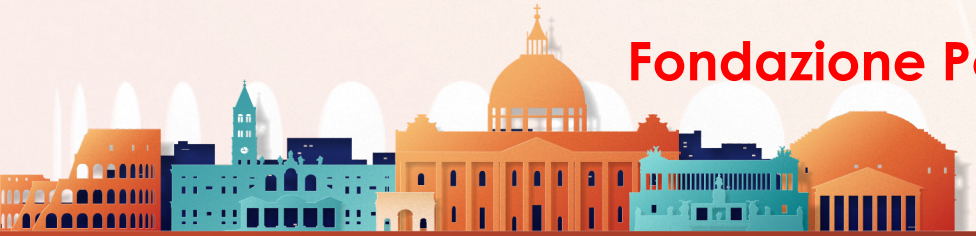
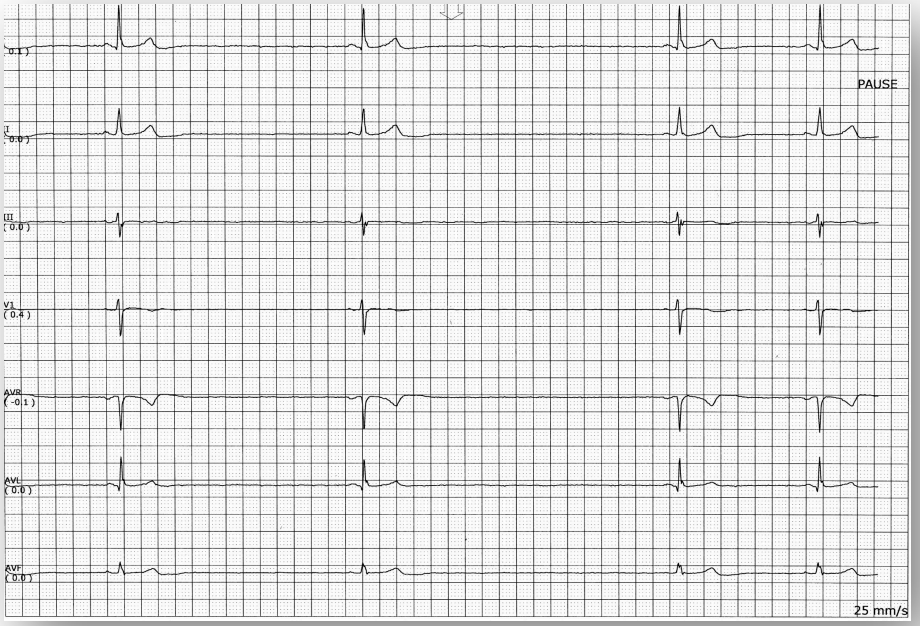
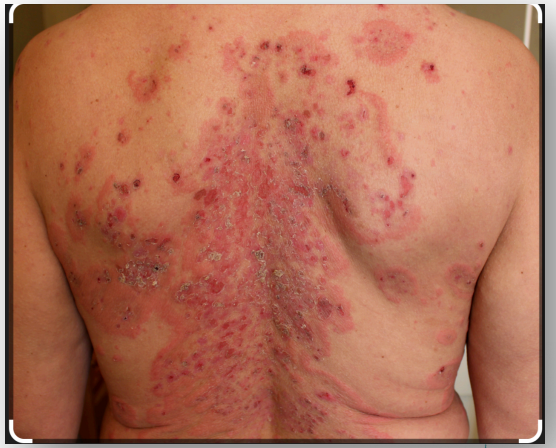


CLINICAL CASE 1

Male, 78 yo, paroxysmal AF, sinus bradycardia and syncope



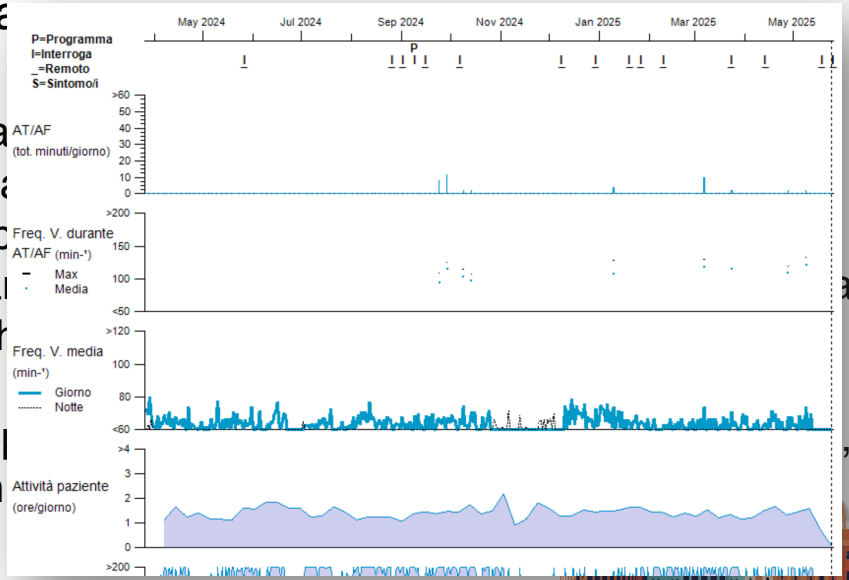
Bullous pemphigoid



CLINICAL CASE 2

62 YO Female, HBP, Dyslip, previous ILR implant because of bradicardia and syncope (2019-2022)
Symptomatic for asthenia, presyncope and syncopal episodes with trauma, no pauses on loop recorder, only bradycardia

Comorbidities: Bilateral mastectomy + right a
currently undergoing oncology follow-up, right a
oophorectomy in 2015 for fibromatosis, colon p
nodules on follow up, diverticulosis, spondyloa
grade B esophagitis with hiatal hernia, hemorrh
multinodular thyroid disease, osteoporosis, L5
T6, and T7, pulmonary hamartoma on follow-up
bilateral blepharitis; Sleep apnea syndrome on



CLINICAL CASE 3

- *Male 62 yo, DM, HBP, Dysl, severe CRF in dyalisis, Obesity*
- *May 2024 CRTd implant because of ischemic moderate HF, EF 40%, paroxysmal complete AVB, paroxysmal AF*
- *Aug 2024 CRTd explant because of pocket infection and Micra AV leadless pacemaker implantation*
- *After few months he returns for a consultation because of* ***asthenia ad reduced exercise tolerance***

KEY QUESTIONS

- DOES THE PATIENT HAVE A REAL INDICATION FOR PACING?
- HOW CAN PROCEDURAL AND INFECTION RISK BE MINIMIZED?
- WHAT IS THE OPTIMAL STRATEGY?

GUIDELINES AND CLINICAL APPLICATION

INDICATIONS

ESC guidelines recommend pacing in the presence of symptoms related to documented bradyarrhythmias and associated syncope.

CHOICE OF PACING MODALITY

The pacing modality should be individualized based on atrial function and **the patient's specific needs**

CLINICAL JUDGMENT

The application of guidelines requires **clinical judgment**, especially in complex patients, to optimize treatment

INNOVATION

Innovative solutions are integrated into clinical practice to improve therapeutic effectiveness.

2021 ESC Guidelines on cardiac pacing and cardiac resynchronization therapy

LIMITS OF AVAILABLE SYSTEMS

RISKS OF TRANSVENOUS LEADS

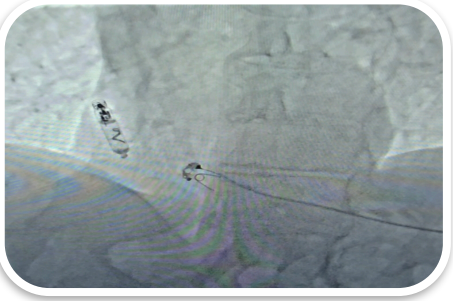
- Systemic & Local Infection: Risk of pocket infections and potentially fatal endocarditis.
- Vascular Issues: Venous thrombosis and stenosis (often asymptomatic but complicating future procedures).
- Mechanical Failures: Lead insulation breath, conductor fracture, or dislodgement over time.
- Tricuspid Valve Interference: Mechanical damage or interference leading to tricuspid regurgitation.
- Cardiac Injury: Risk of myocardial perforation or cardiac tamponade during implantation or extraction.

LIMITS OF AVAILABLE SYSTEMS

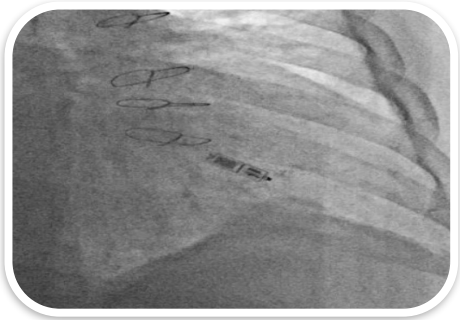
MANAGEMENT OF COMPLICATIONS & COMPLEX PROCEDURES

- For Transvenous Systems:
  - Extraction Complexity: Risks associated with transvenous lead extraction (TLE), especially for old, calcified leads.
  - Lead Revision: Management of redundant/abandoned leads and venous access preservation.
- For Leadless Devices:
  - End-of-Life (EOL) Strategy: Deciding between device abandonment (and "layering" of new devices) vs. percutaneous retrieval.
  - Retrieval Challenges: Increased complexity of retrieval after long-term fibrosis or encapsulation.
  - Procedural Mastery: Managing specialized complications such as femoral access site hematomas or embolization.

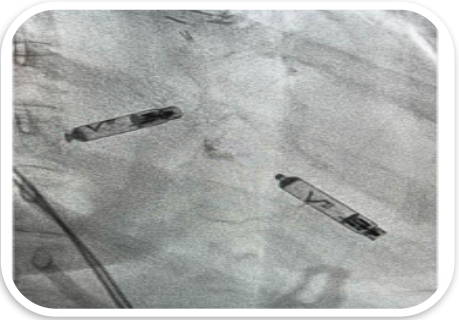
HOW MANY OPTIONS DO WE HAVE FOR LEADLESS PACING ?



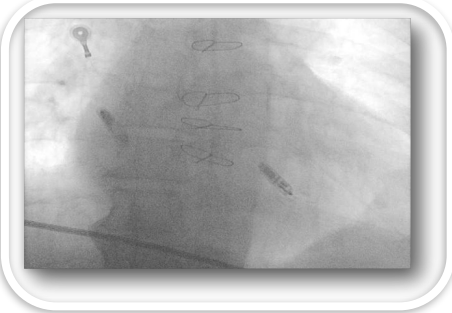
AAI



VVI/VDD



DDD



HYBRID

LEADLESS SYSTEM OPTIONS?

Dedicated leadless atrial pacing system

AR + VR

Active or passive fixation

Retrievability

VDD Technologies

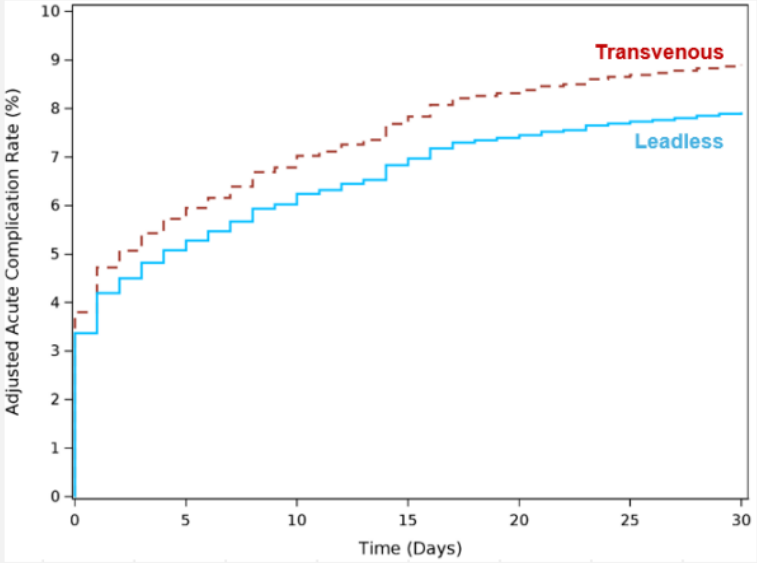
ORIGINAL ARTICLE OPEN ACCESS

Leadless Versus Transvenous Dual-Chamber Pacemakers: Real-World Evidence From AVEIR DR Coverage With Evidence Development Study

Monica Lo[1] | Anish K. Amin[2] | Marcin Kowalski[3,4] | Anne Kroman[5] | Dilip Mathew[6] | Valay Parikh[3,4] | Stanislav Weiner[7] | Jennifer M. Joseph[8] | Leonard Ganz[9] | Mohammed Mortada[10,11] | AVEIR DR Study Group/Consortium

JCE 2026

LEADLESS VS TRANSVENOUS DUAL-CHAMBER PACEMAKERS: REAL-WORLD EVIDENCE*



	Aveir DR (N = 759)	Transvenous (N = 77,422)	Odds Ratio (95% CI)	P-value
30-day Unadjusted	8.0%	8.3%	0.91 (0.63,1.32)	0.62
30-day Adjusted	7.9%	9.2%	0.85 (0.60, 1.20)	0.36

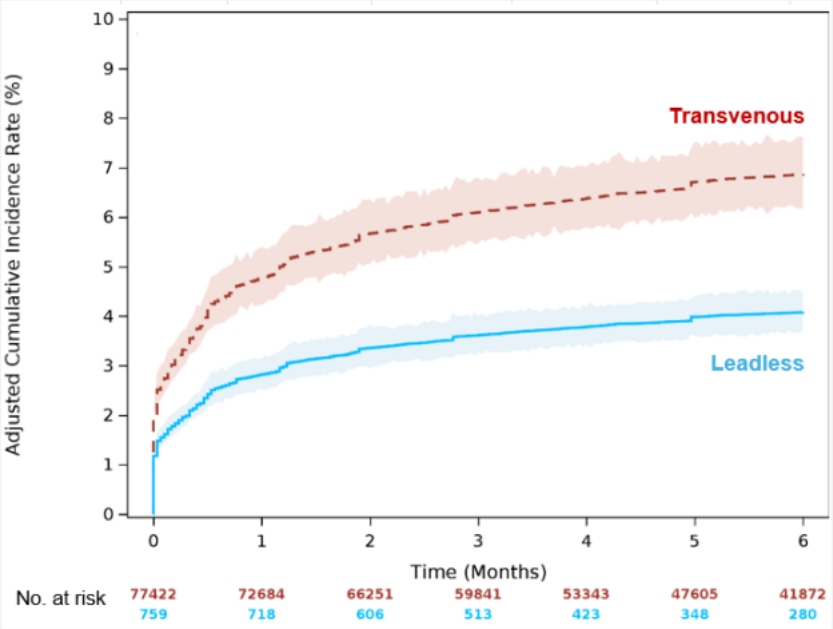
10

No significant difference in overall acute complications between AVEIR DR and Transvenous pacemakers.

Monica Lo and AVEIR DR Study Group/Consortium JCE 2026;

LEADLESS VS TRANSVENOUS DUAL-CHAMBER PACEMAKERS: REAL-WORLD EVIDENCE*

41% lower risk of overall chronic complications for AVEIR DR compared to Transvenous pacemakers at 6 months.



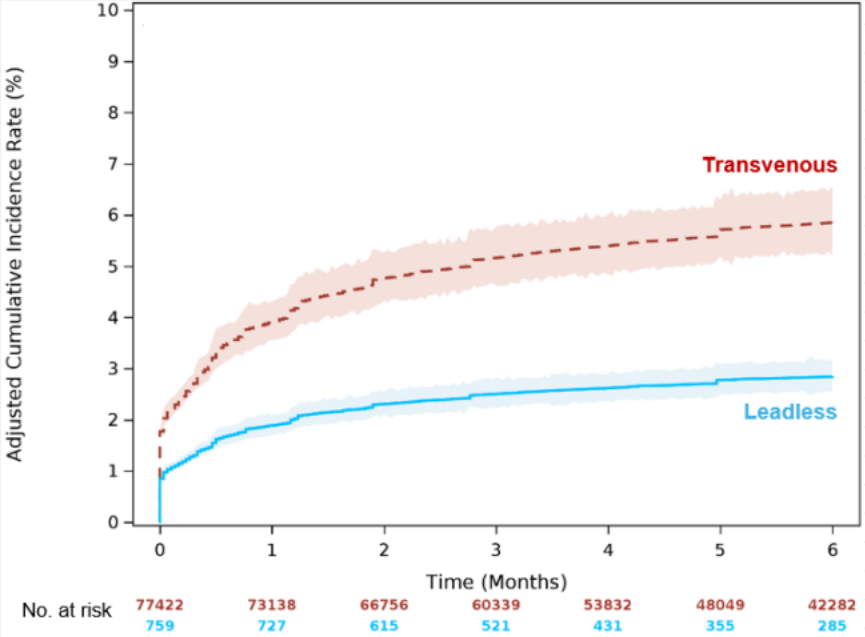
	Aveir DR (N = 759)	Transvenous (N = 77,422)	Hazard Ratio (95% CI)	P-value
6-month Unadjusted	4.2%	6.6%	0.63 (0.43, 0.92)	0.02
6-month Adjusted	4.1%	6.9%	0.59 (0.40, 0.86)	<0.01

- Includes only a subset of the complications evaluated for the acute endpoint
- Rate includes the first 30 days

Monica Lo and AVEIR DR Study Group/Consortium JCE 2026;

LEADLESS VS TRANSVENOUS DUAL-CHAMBER PACEMAKERS: REAL-WORLD EVIDENCE*

52% lower risk of device-related complications for AVEIR DR compared to Transvenous pacemakers at 6 months.

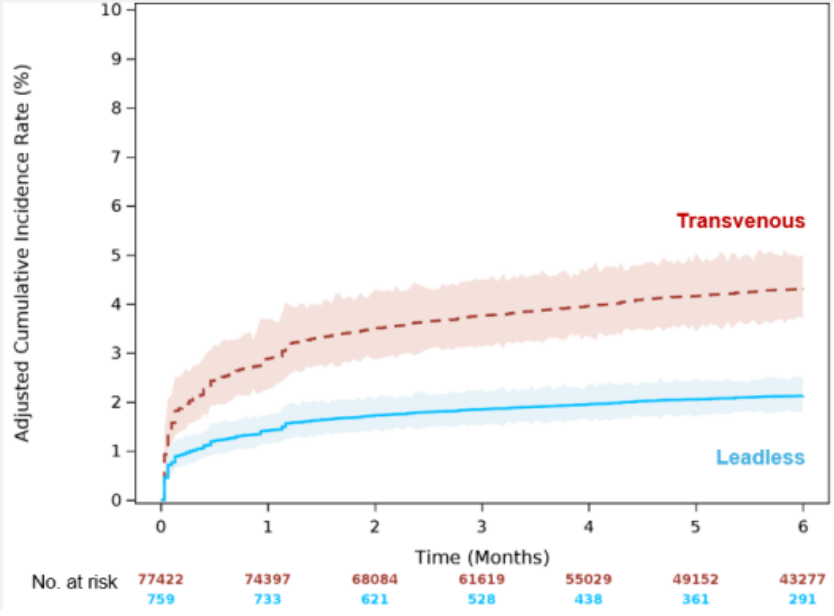


	Aveir DR (N = 475)	Transvenous (N = 59,565)	Hazard Ratio (95% CI)	P-value
Unadjusted	2.9%	5.7%	0.50 (0.32, 0.79)	<0.01
Adjusted	2.8%	5.9%	0.48 (0.30, 0.75)	<0.01

Monica Lo and AVEIR DR Study Group/Consortium JCE 2026;

LEADLESS VS TRANSVENOUS DUAL-CHAMBER PACEMAKERS: REAL-WORLD EVIDENCE*

51% lower risk of overall device reinterventions for AVEIR DR compared to Transvenous pacemakers at 6 months.

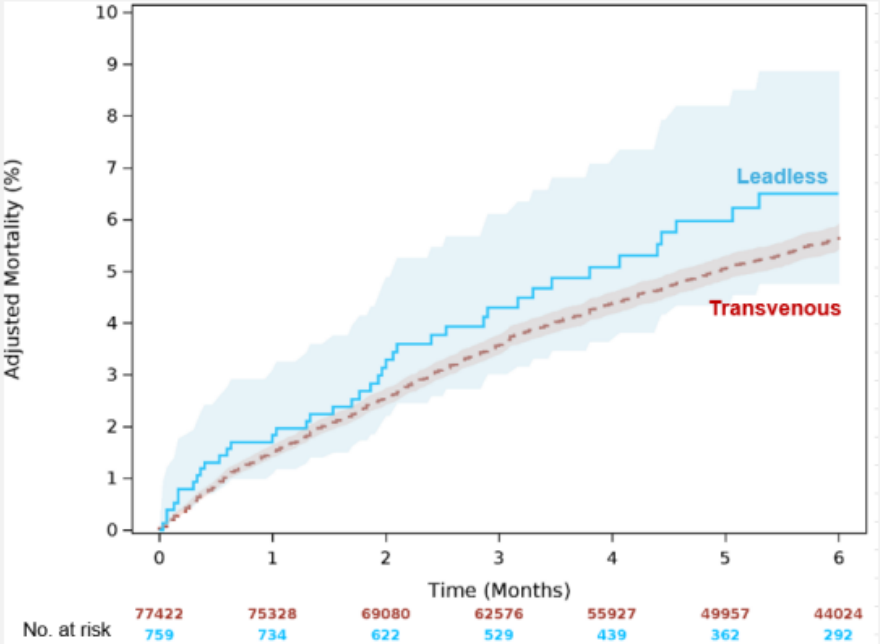


	Aveir DR (N = 759)	Transvenous (N = 77,422)	Hazard Ratio (95% CI)	P-value
Unadjusted	2.2%	4.2%	0.51 (0.31, 0.83)	<0.01
Adjusted	2.1%	4.3%	0.49 (0.30, 0.80)	<0.01

- Device reintervention includes revisions, replacements, removals, lead-related reinterventions, and upgrades to CRT or ICD.
- The most common reason for reintervention in the transvenous group was lead-related reinterventions (2.4%).

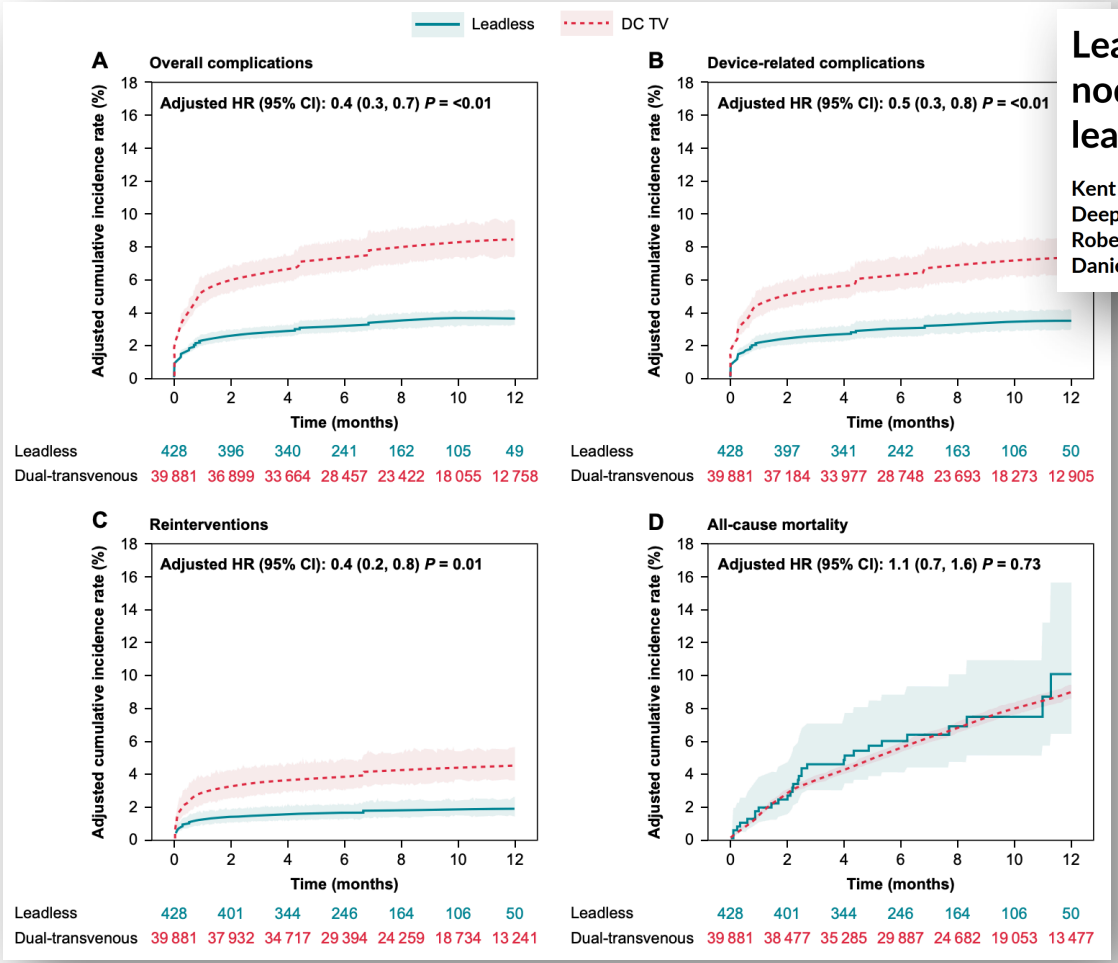
Monica Lo and AVEIR DR Study Group/Consortium JCE 2026;

LEADLESS VS TRANSVENOUS DUAL-CHAMBER PACEMAKERS: REAL-WORLD EVIDENCE*



	Aveir DR (N = 759)	Transvenous (N = 77,422)	Hazard Ratio (95% CI)	P-value
30-Day Mortality				
Unadjusted	1.9%	1.3%	1.42 (0.86, 2.35)	0.18
Adjusted	1.8%	1.5%	1.21 (0.72, 2.02)	0.47
6-Month Mortality				
Unadjusted	6.8%	4.8%	1.41 (0.95, 2.10)	0.09
Adjusted	6.6%	5.6%	1.18 (0.79, 1.76)	0.43

Monica Lo and AVEIR DR Study Group/Consortium JCE 2026;



Leadless atrial versus transvenous pacing for sinus node dysfunction: 1-year outcomes from the leadless ARRIVE real-world study

Kent R. NilssonJr [1], Ulrika Birgersdotter-Green[2], Shmaila Saleem-Talib [3], Deepti Bettampadi [4], Zeyuan Yang[4], Jorge O. Diaz [5], James K. Gabriels [6], Robert D. Schaller [7], Himanshu H. Shukla [8], Michael Kühne [9], Mauro Biffi [10], Daniel Hofer [11], John Paisey[12], Yelena Nabutovsky [4], and Christophe Garweg [13*]

Comparison of :

- 1-year complications (A)
- device-related complications (B)
- reinterventions (C)
- all-cause mortality (D)

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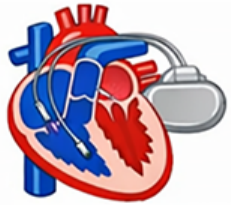
AVEIR™ AR
(*N* = 428)

VS.



Transvenous
(*N* = 39 881 dual-chamber, *N* = 389 right atrial)

30% ↓	**Lower 30-day complications with AVEIR™ AR** DCTV: OR 0.7 (0.5, 0.98), *P* = 0.04 RATV: OR 1.0 (0.6, 1.8), *P* = 0.94
60% ↓	**Lower 1-year complications with AVEIR™ AR** DCTV: HR 0.4 (0.3, 0.7), *P* < 0.01 RATV: HR 0.4 (0.2, 0.9), *P* = 0.02
60% ↓	**Lower 1-year reinterventions with AVEIR™ AR** DCTV: HR 0.4 (0.2, 0.8), *P* = 0.01 RATV: HR 0.3 (0.1, 0.8), *P* = 0.02
=	**Similar all-cause mortality** DCTV: HR 1.1 (0.7, 1.6), *P* = 0.73 RATV: HR 0.7 (0.4, 1.2), *P* = 0.20

DCTV: dual-chamber transvenous
RATV: right atrial transvenous

Europace (2026) 28, euag072 https://doi.org/10.1093/europace/euag072

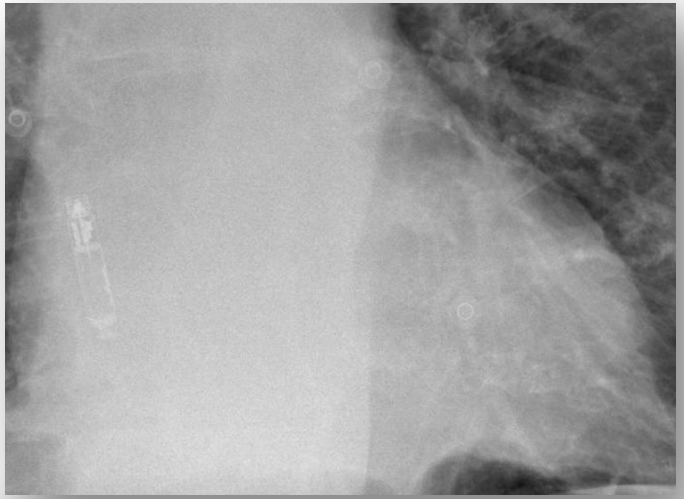
Dual-chamber leadless systems: Twice the technology, double the long-term management challenges

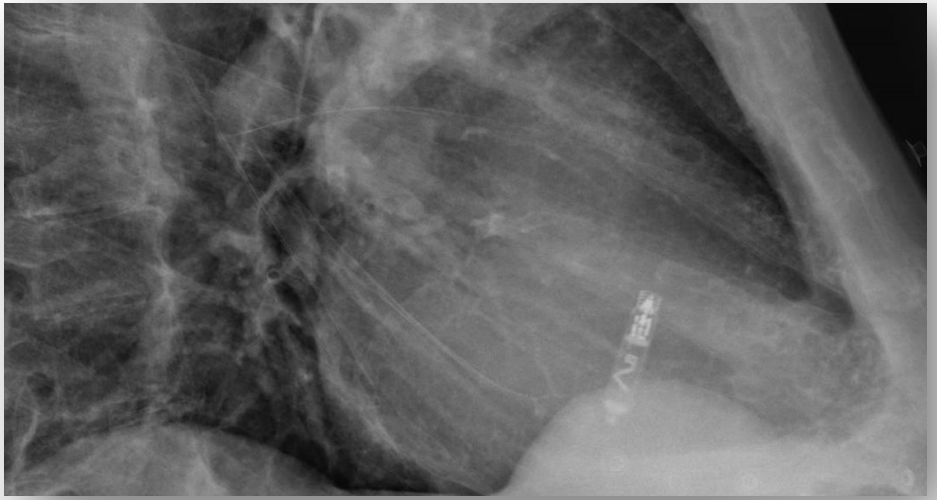
WHY NOT OPT FOR AN ATRIAL LEADLESS DEVICE?

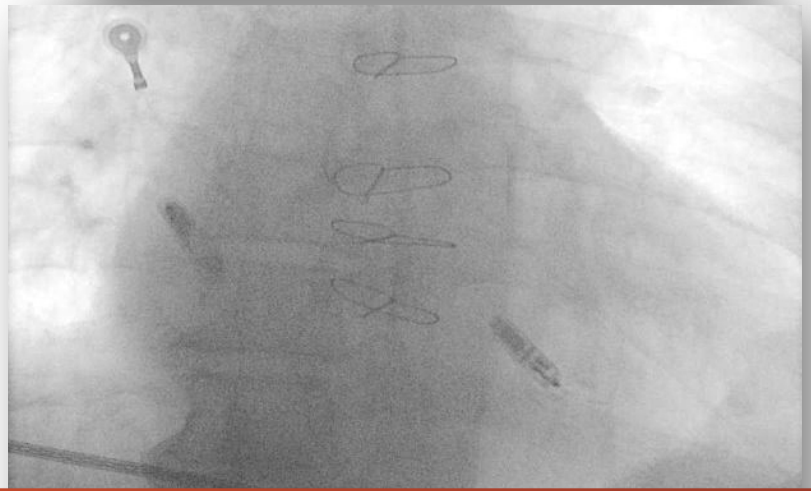
WHY NOT START WITH ATRIAL PACING AND THEN CONSIDER DDD PACING IF NEEDED?

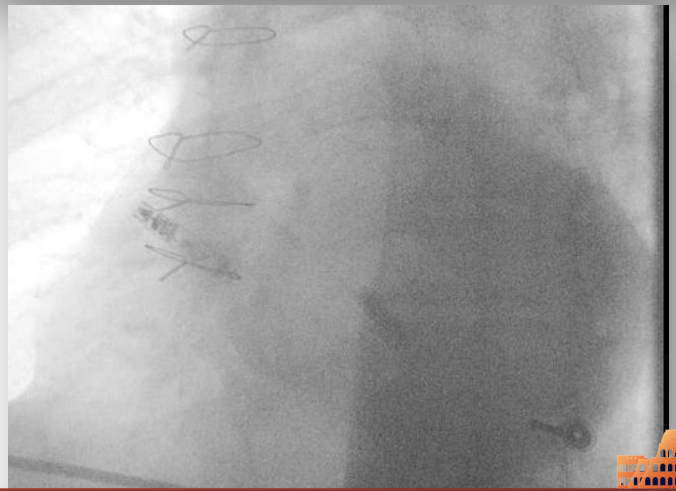
FOLLOW-UP

- Successful implantation
- Consistent electrical performance
- Infections observed
- Proven clinical benefit
- Time for DDD upgrading









CONCLUSIONS

LEADLESS ATRIAL PACING

- Leadless atrial pacing is a new frontier with significant potential for complex patients

PERSONALIZED ASSESSMENT

- Thorough assessment and a personalized approach guide the choice of the most appropriate technology

THERAPEUTIC INNOVATION

- Leadless pacing expands therapeutic options, overcoming the limitations of traditional pacing

REAL CLINICAL BENEFIT

- Right patient, right technology, conscious decision