The Role of Atrial Sensing for New-Onset Atrial Arrhythmias Diagnosis and Management in Single-Chamber Implantable Cardioverter Defibrillator Recipients: **Results From the THINGS Registry**

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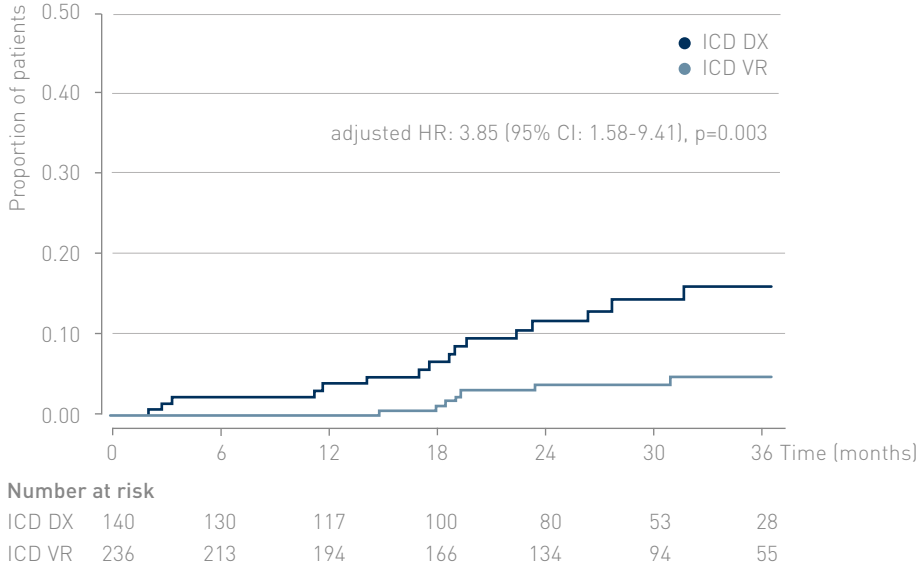
Study Design

- Prospective, observational, multi-center study (15 centers in Italy), based on a patient selection of the THINGS registry[1]
- To explore whether a single-lead ICD with an atrial dipole (ICD DX) improves AT/AF diagnosis and management as compared to standard single-chamber ICD (ICD VR)
- 376 patients (140 ICD DX and 236 ICD VR) with standard ICD indication and without history of AT/AF

Main Results

Incidence of AT/AF Diagnosis: Significantly Higher with ICD DX Compared to Single-Chamber ICDs

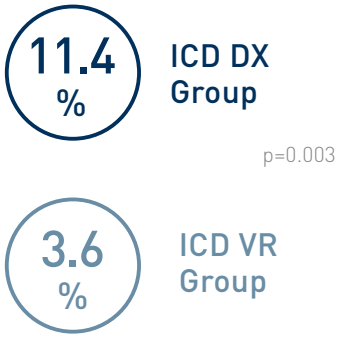
New-Onset AT/AF Diagnosis



Number at risk

ICD DX	140	130	117	100	80	53	28
ICD VR	236	213	194	166	134	94	55

2-Year Incidence of New-Onset AT/AF Diagnosis



Clinical Relevance

- An early first diagnosis of AT/AF is of clinical importance, yet can be challenging as silent AF is common.
- DX systems allow early detection of atrial arrhythmias and quantification of arrhythmic burden.
- The results show that DX systems are associated with an almost 4-fold likelihood of detecting AT/AF compared to conventional devices.
- The diagnosis of AT/AF often leads to clinical interventions, mainly represented by oral anticoagulation (OAC) onset.

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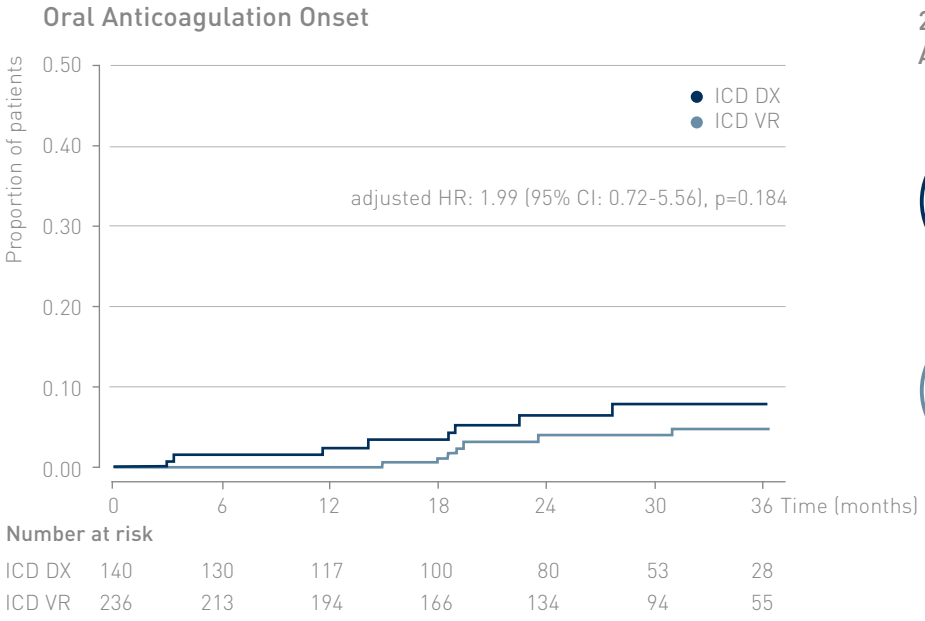
Clinical Interventions Related to New-Onset AT/AF: OAC Onset Most Frequent

Clinical intervention related to AT/AF diagnosis	All (N=376)	ICD VR (N=236)	ICD DX (N=140)
Oral anticoagulation onset	15 (4.0)	7 (3.0)	8 (5.7)
Betablockers dosage increase	2 (0.5)	1 (0.4)	1 (0.7)
Diuretics/K+ sparing adjustment	4 (1)	2 (0.8)	2 (1.4)
Electrical cardioversion	2 (0.5)	1 (0.4)	1 (0.7)
Radiofrequency ablation	1 (0.3)	0 (0)	1 (0.7)
Rate control improved	3 (0.9)	2 (0.8)	1 (0.7)
Antiarrhythmic drug onset	1 (0.3)	1 (0.4)	0 (0)

Data are expressed as number of patients (percentage).

Incidence of OAC Onset: In Tendency Higher with ICD DX



2-Year Incidence of OAC Onset After AT/AF Diagnosis

6.3 % ICD DX Group

p=0.184

3.6 % ICD VR Group

Atrial Sensing with ICD DX: Reliable and Stable

5.5 mV Median P-wave sensing at baseline.

5.5 mV Stable median P-wave sensing at 2-year follow-up.

98.6 % Almost all patients showed appropriate atrial signal detection at 2-year follow-up.

1 THINGS registry (THe sINgle lead reGiStry).

Source:
Biffi, M, Iori, M, De Maria, E, et al. The role of atrial sensing for new-onset atrial arrhythmias diagnosis and management in single-chamber implantable cardioverter-defibrillator recipients: Results from the THINGS registry. J Cardiovasc Electrophysiol. 2020; 1– 8. https://doi.org/10.1111/jce.14396.

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