Benefits of ICD for the primary prEvention in patients with vAlvular cardiomyopaThy - BEAT study -

Chung, Tae-Wan

Keimyung university Dongsan medical center, Korea

Korean Heart Rhythm Society

COI Disclosure

Name of First Author:

Tae-Wan Chung

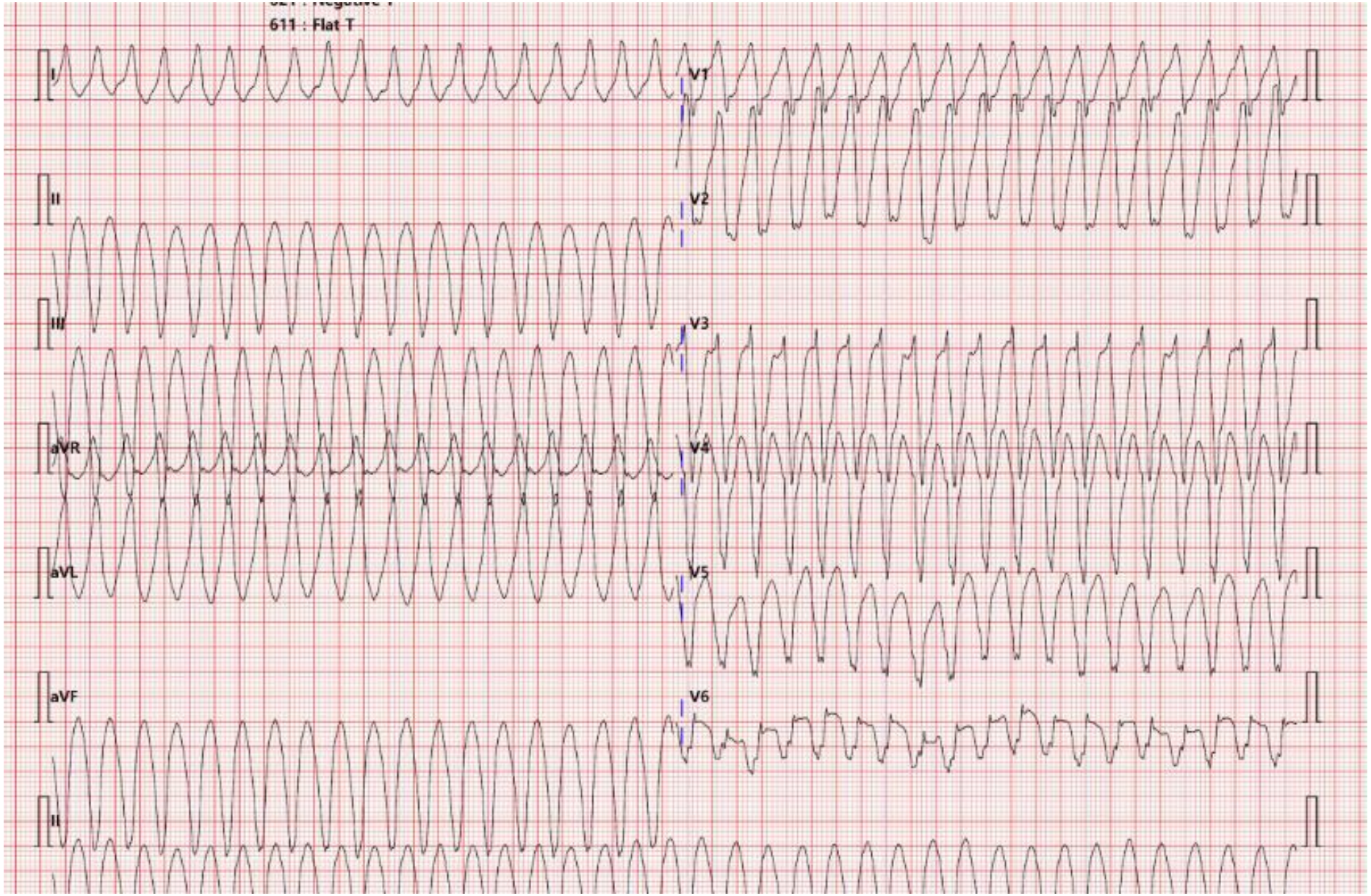
The authors have no financial conflicts of interest to disclose concerning the presentation

Disclosure

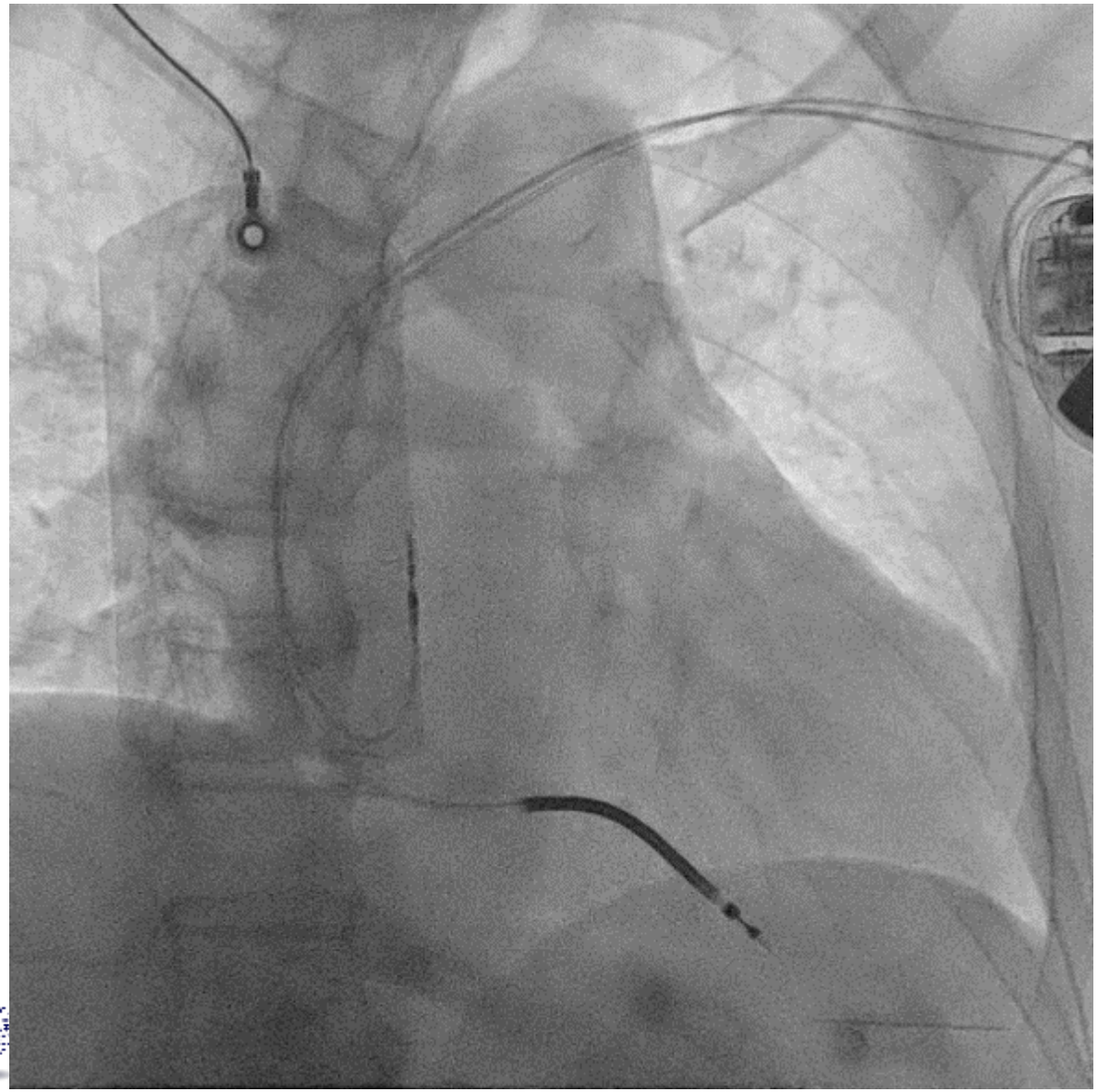
Relationships with commercial interests:

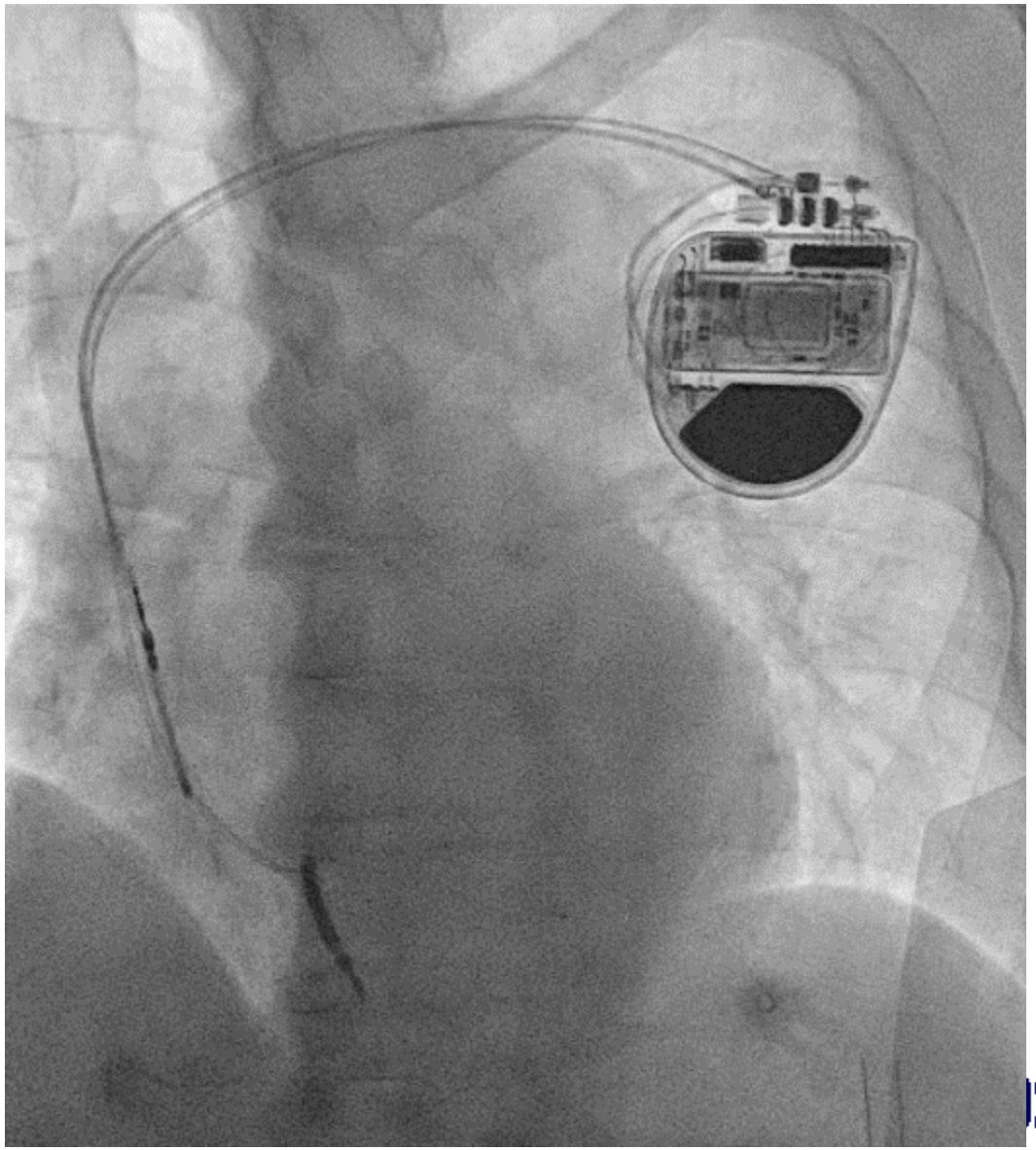
- Grants/Research Support:
- Consulting Fees:
- Other:

No doubt about ICD benefit

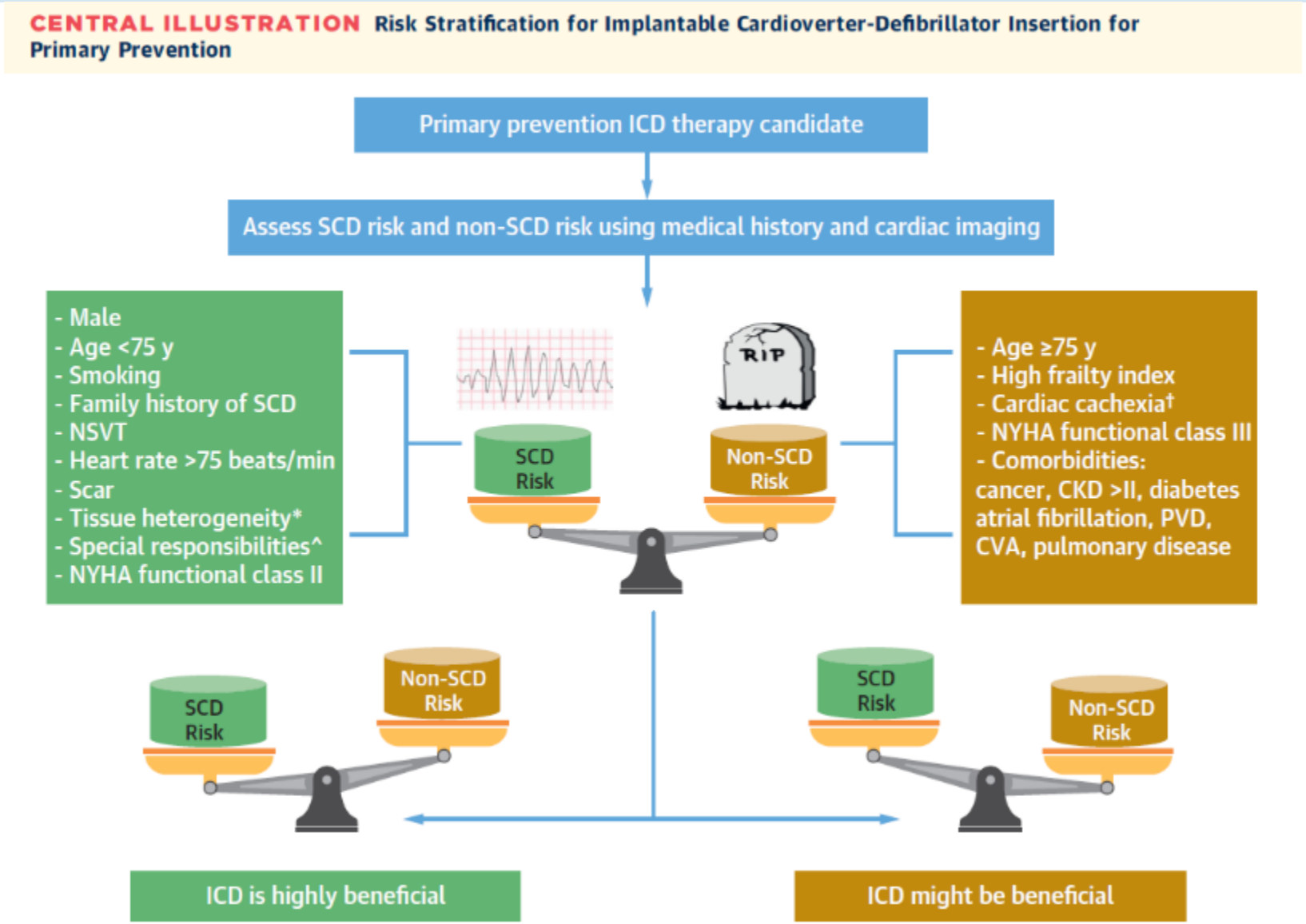


No doubt about ICD benefit





Doubt about ICD benefit as Primary prevention



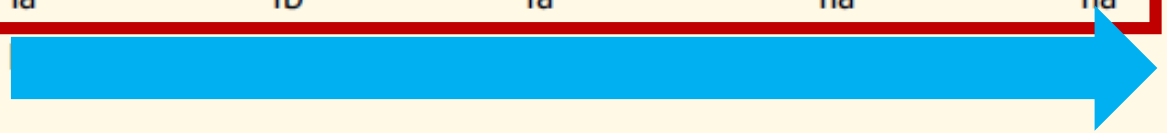
Younis A, et al. JACC: Asia. 2023;3(3):321-334.

Younus A, et al. JACC: Asia. 2023;3(3):321-334

Doubt about ICD benefit as Primary prevention

TABLE 2 Guidelines for Primary Prevention Implantation of Cardioverter-Defibrillators

	Cardiomyopathy	ACCF/AHA 2013	ESC 2016	Canadian 2017	Australian 2018	ESC 2021
LVEF ≤35% despite ≥3 mo of optimal GDMT with NYHA functional class II-III	Ischemic	Ia	Ia	Ia[a]	Ia[b]	Ia
	Nonischemic	Ia	Ib	Ia	IIa[a]	IIa[a]
LVEF ≤30% despite ≥40 days of optimal GDMT with NYHA functional class I	Ischemic					



Younus A, et al. JACC: Asia. 2023;3(5):321-334

Doubt about ICD benefit as Primary prevention

TABLE 4 Indications in Nonischemic Cardiomyopathies by Etiology

List of NICM Etiologies That Are Given Special Consideration for ICD Implantation

Cardiomyopathy	United States	If 1 of the Following:	Europe	If 1 of the Following:
Sarcoidosis	Yes	• Scar • Syncope • Permanent pacing	Yes	• Permanent pacing
Hypertrophic	Yes	• Maximum LV wall thickness ≥30 mm • Family history of SCD • Syncope	Yes	• Estimated 5-y risk of SCD ≥6%
Long QT syndrome	Yes	• Syncope despite medication therapy	Yes	• Syncope despite medication therapy
LAMIN A/C	Yes	• ≥2 risk factors: NSVT, LVEF<45%, non-missense, male	Yes	• ≥2 risk factors: NSVT, LVEF<45%, non-missense, male
ARVC/D	Yes	• Syncope	Yes	• Syncope
Adult congenital	Yes	• Inducible VT/VF	No	

List of Other NICM Etiologies That Are Mentioned Within a Text or a Paragraph

- Valvular
- Amyloidosis
- Pacing/Tachycardia induced
- Post-partum
- Desmin-related
- Phospholamban related
- SCN5A related
- Medication induced
- Neuromuscular disorders
- Other channelopathies

Younus A, et al. JACC: Asia. 2023;3(3):321-334

‘BEAT study’

Benefits of ICD
for the primary prEvention
in patients
with vAlvular cardiomyopaThy

Study design

- ✓ Prospective
- ✓ Observational study
- ✓ Target N : 110
- ✓ Multi-center
  - Total 15 cardiovascular centers were joined

Study design

- ✓ 2018 ~ 2019
- ✓ 19 ~ 75 year-old
- ✓ 12 more months after AV or MV op.
- ✓ More than moderate AV or MV disease
- ✓ LVEF <35%
- ✓ No evidence of ICMP

Follow-up plan and Outcomes

- ✓ 2 years of follow-up : 0.5/ 3/ 6/ 12/ 18/ 24 months visits
- ✓ **Primary outcome**
  - Frequency of ventricular arrhythmia and treatment
- ✓ **Secondary outcome**
  - Death : cardiac/ non-cardiac
  - Appropriate vs. inappropriate treatment
  - Type of ventricular arrhythmia

Baseline character

✓ Total **12 patients** had been enrolled by 7 centers

	Mean
Male	6 (50%)
Age	**63 (Year)**
BMI	23.4
LVEF	**28.2%**
Hypertension	8 (66.7%)
Diabetes	9 (75%)
Atrial fibrillation	6 (50%)

Result

NO	1-2w	3m	6m	12m	18m	24m	Comment
1	O	O	O	O	O	X	HT after
2	O	O	O	O	O	X	FU loss
3	O	O	O	O	O	O	
4	O	O	X	O	O	O	Interrogation loss
5	O	X	X	X	X	X	Loss d/t HT
6	O	O	O	O	O	O	
7	O	O	O	O	O	O	
8	O	O	O	O	O	O	
9	X	O	O	O	O	O	Interrogation loss
10	X	O	O	O	O	O	Interrogation loss
11	X	X	O	O	O	O	Interrogation loss
12	O	X	O	O	O	O	Interrogation loss

Ave. 4.92 f/u with ICD interrogation

No death

No ventricular arrhythmia event

(Only 1 appropriate shock event)

Discussion points : Limitations

Only 10% of target population d/t low incidence

Statistically insignificant

Lower tendency than expectation
- Previously 5% in VHD, 13% in ICMP

"Big data" ???

References

- Valles AG, et al. Implantable Cardioverter Defibrillators in Patients with Valvular Cardiomyopathy. J Cardiovasc Electrophysiol, 2012;23:1326-1332
- Rosenheck S, et al. Therapy success and survival in patients with valvular heart disease and implantable cardioverter defibrillator. doi:10.1016/j.ijcard.2008.12.144
- Rodriguez-Man˜ero M, et al. Primary Prevention of Sudden Death in Patients With Valvular Cardiomyopathy. Rev Esp Cardiol. 2016;69:272–278
- Yang F, et al. ICD Implantation and Arrhythmia-Free Survival in Patients with Depressed LV Function Following Surgery for Valvular Heart Disease. PACE 2008; 31:1419–1424


Thank you for
your attention !!!
계명대학교 동산병원