Impact of ICD Therapy on Mortality in HCMP

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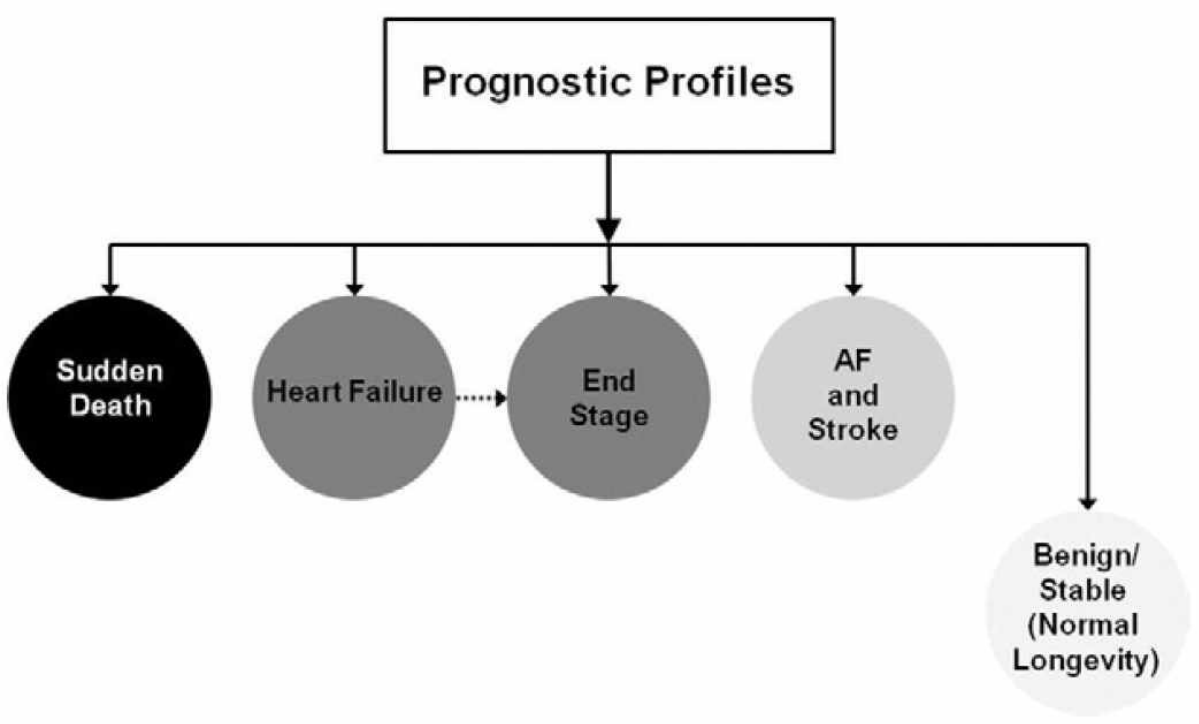
1. Risk of sudden cardiac death



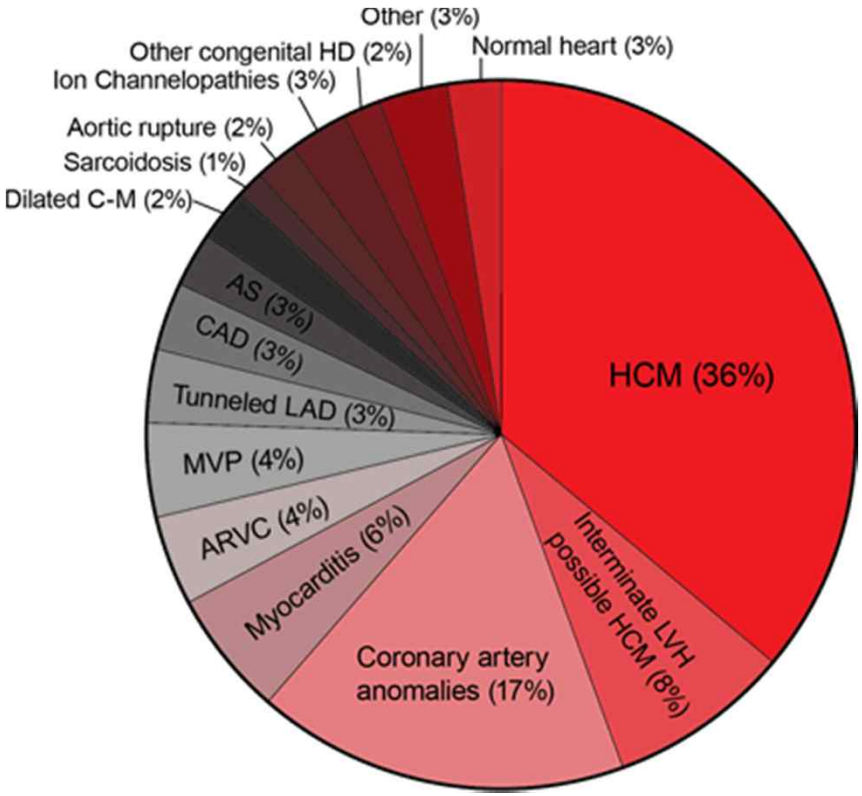
Epidemiology of SCD

- 20,000 / yr in South Korea
  - even only out of hospital
  - 41 / 100,000 person
  - 1 / 30 minutes
- 250,000 ~ 300,000 / yr in US
  - 53 / 100,000 person

Associated conditions

- Structural heart disease (= ventricular substrate)
  - ICMP, DCMP, **HCMP**, ARVD, sarcoidosis, surgical scar…
- Inherited primary arrhythymia syndrome
  - Long/Short QT syndrome, Brugada syndrome, Early repolarization syndrome, Catecholaminergic polymorphic VT, Idiopathic ventricular fibrillation

Sudden death in young athletes



Hypertrophic cardiomyopathy

- 1/500 in general population, family history in more than half

- Most common cause of SCD in young (esp. athlete)

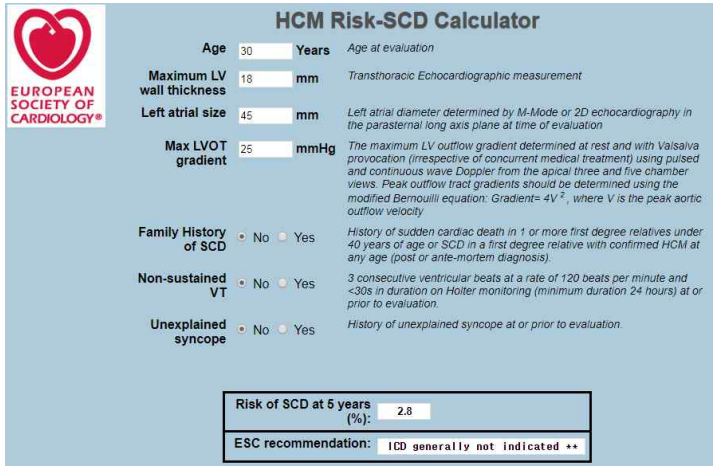
ICD indication for primary prevention

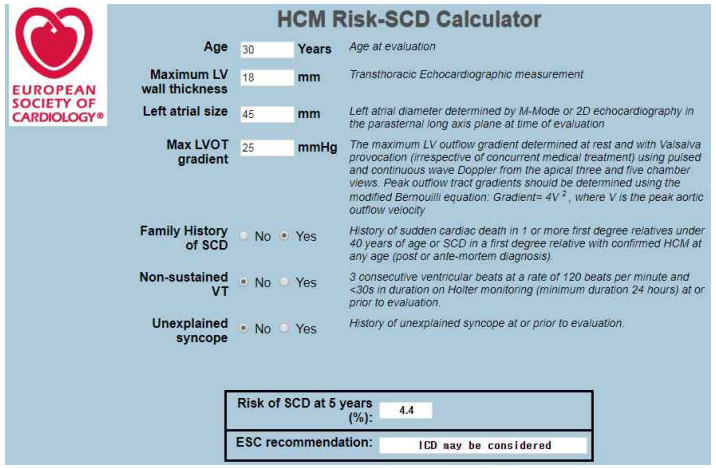
AHA/ACC 2017 Class IIa

- Syncope within 6m
- Family history of SCD
- LV wall thickness ≥ 30mm
- NS VT or BP drop during exercise
  - < 30yr, Scar on MR, LVOT obstruction, syncope > 5yr, LV aneurysm, EF< 50%

ESC 2015 Class IIa

- ≥6% by Risk-SCD calculator





2. Apical vs. Asymmetric

2011 ACCF/AHA Guideline for the Diagnosis and Treatment of Hypertrophic Cardiomyopathy: Executive Summary : A Report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines

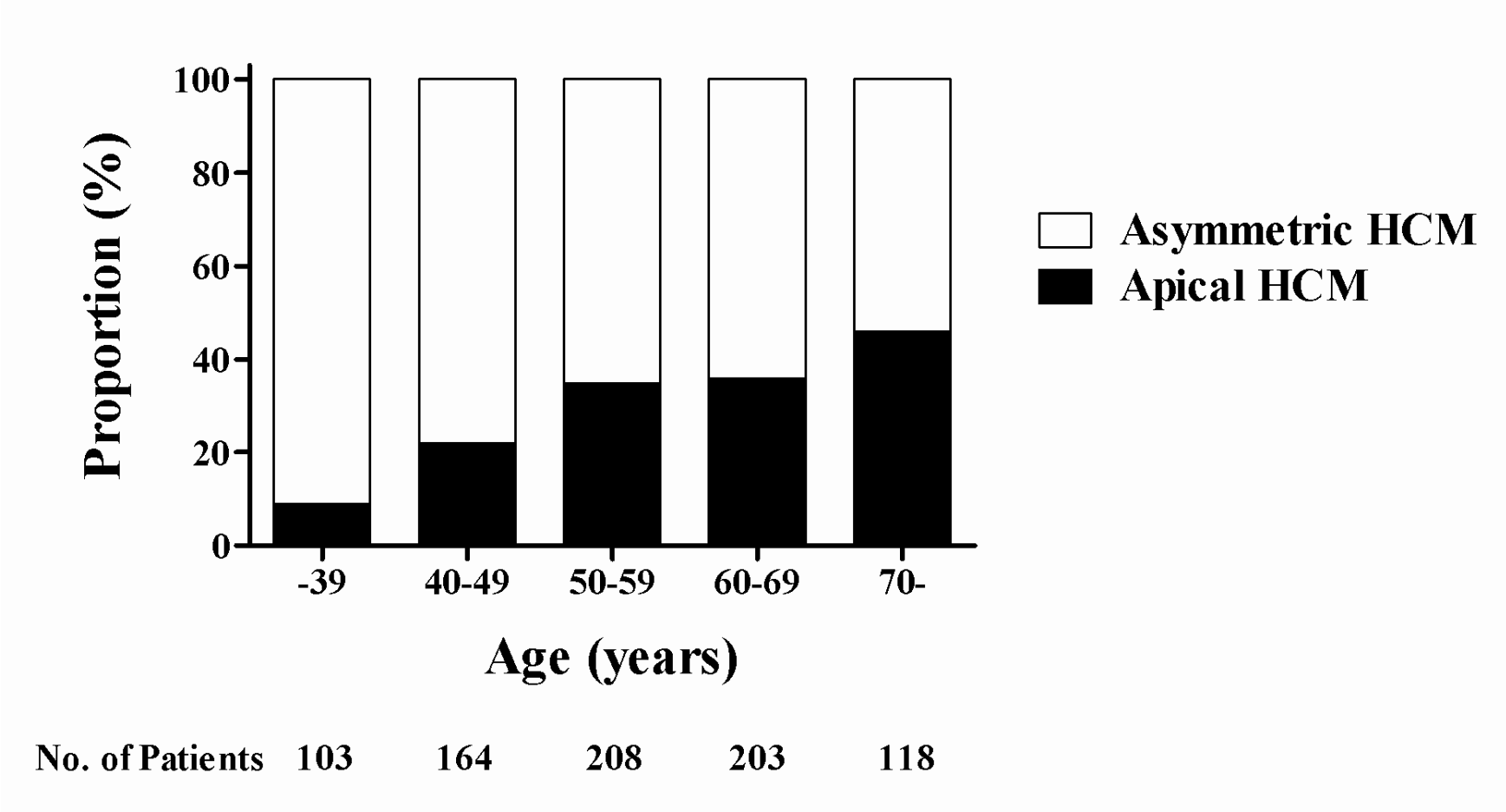
Writing Committee Members, Bernard J. Gersh, Barry J. Maron, Robert O. Bonow, Joseph A. Dearani, Michael A. Fifer, Mark S. Link, Srihari S. Naidu, Rick A. Nishimura, Steve R. Ommen, Harry Rakowski, Christine E. Seidman, Jeffrey A. Towbin, James E. Udelson and Clyde W. Yancy

- **HCMP guideline (31 pages) 중,**
  apical HCMP 가 언급된 부분은 ?

4. **TTE combined with the injection of an intravenous contrast agent is reasonable if the diagnosis of apical HCM or apical infarction or severity of hypertrophy is in doubt, particularly when other**

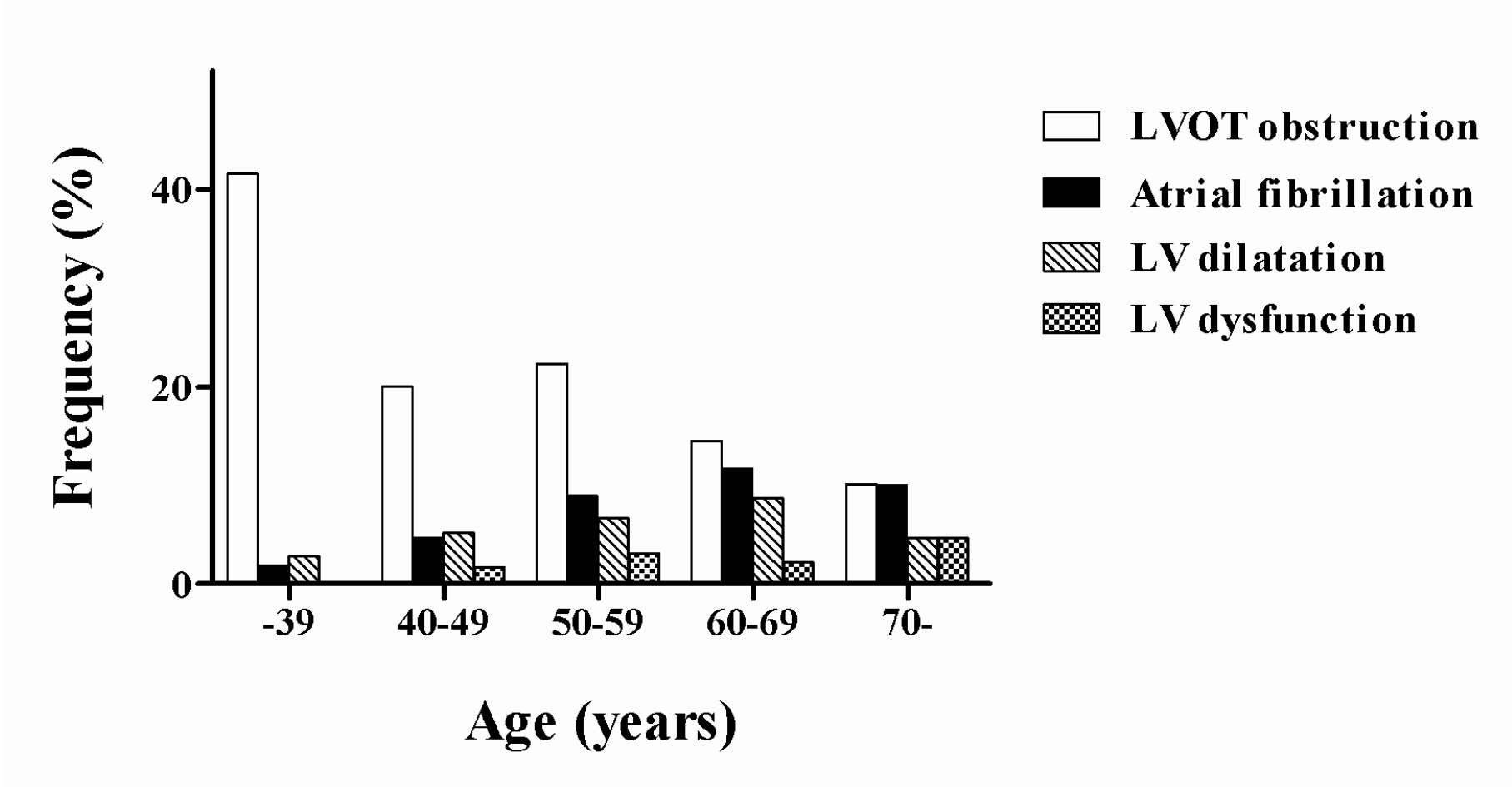
1. **CMR imaging is reasonable in patients with HCM to define apical hypertrophy and/or aneurysm if echocardiography is inconclusive.[73,75] *(Level of Evidence: B)***

Age at the diagnosis



Kim et al. *Int Heart J*. 2013

LV chamber and AF



Is Apical HCM benign?

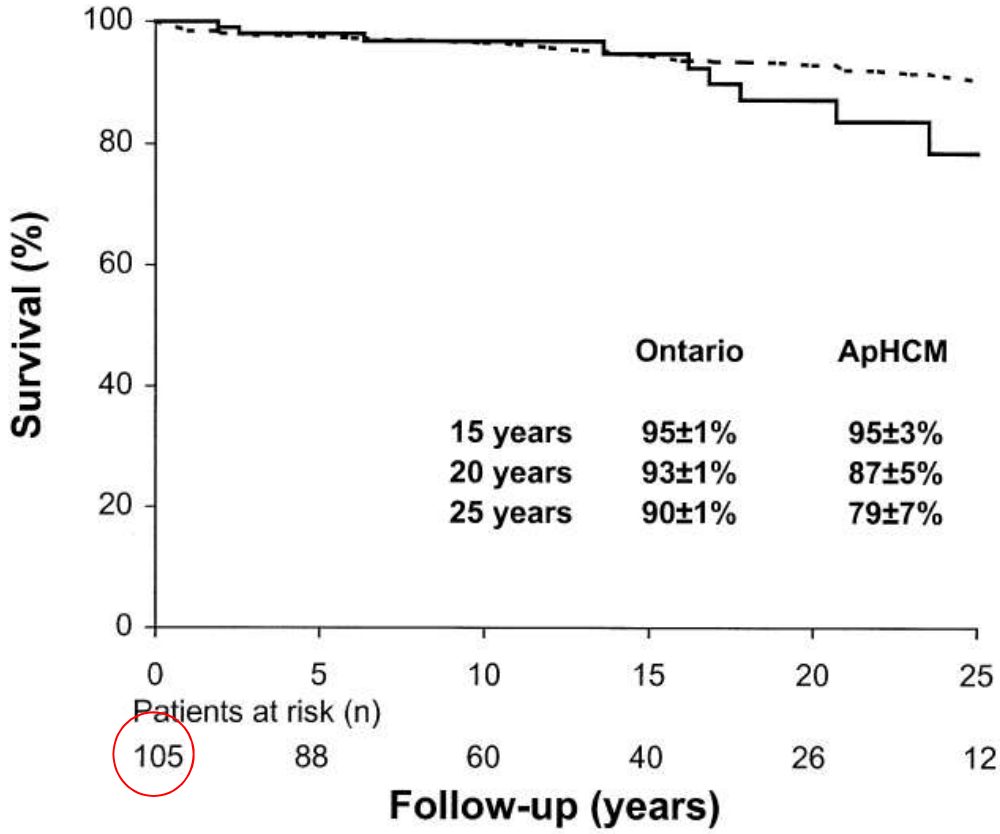
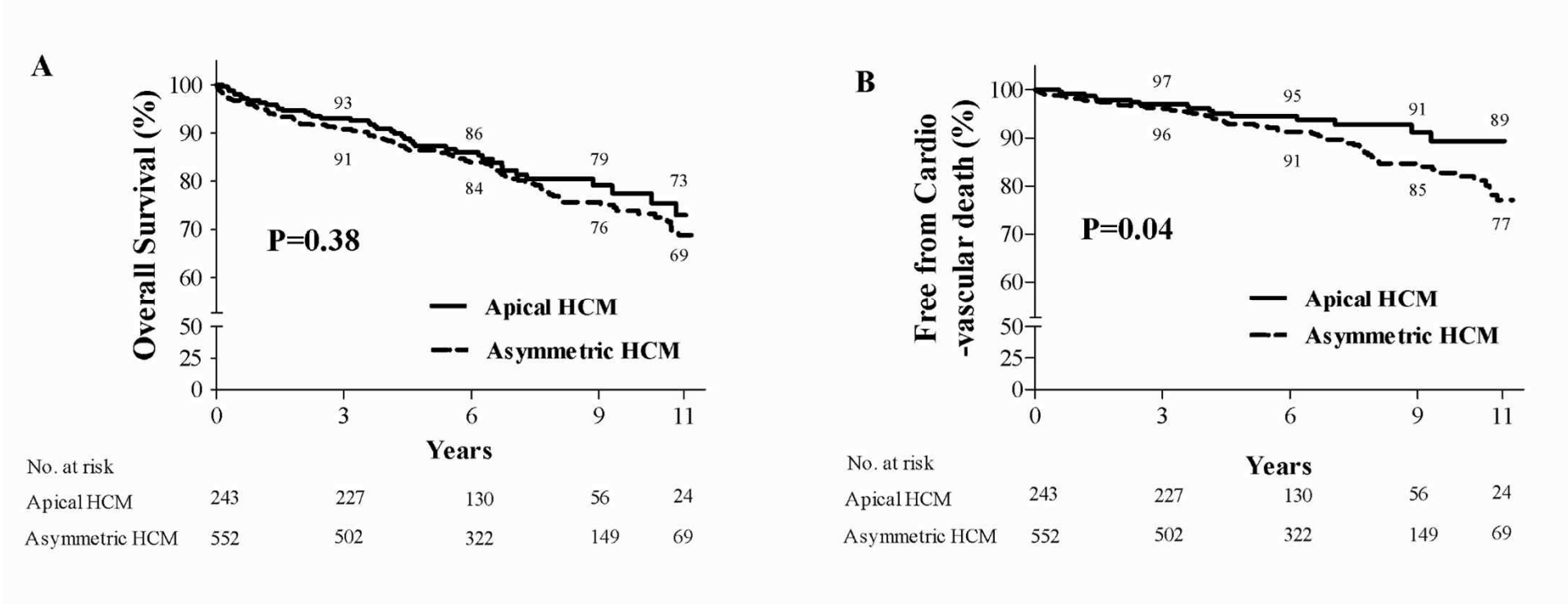


Table 1. Baseline Characteristics of the Study Population

Men/women	78/27
Age at presentation (yrs)	41.4 ± 14.5

Eriksson et al. *JACC* 2002

Unadjusted Survival Rates



All-cause death

CV death

Kim et al. *Int Heart J*. 2013

Adjusted hazard ratios, vs. apical HCM

Analysis	All-cause death				Cardiovascular death			
	Hazard ratio	95% CI		P value	Hazard ratio	95% CI		P value
		Lower	Upper			Lower	Upper	
Univariate Cox Model	1.17	0.82	1.66	0.38	1.76	1.02	3.03	0.04
Multivariate Cox Model	1.73	1.21	2.47	0.003	2.54	1.45	4.45	0.001
Inverse-probability-of -treatment weighting	1.44	0.99	2.09	0.05	1.92	1.08	3.42	0.03
Propensity Score Matching	1.57	1.00	2.46	0.05	2.04	1.08	3.89	0.03

Kim et al. *Int Heart J*. 2013