제1회
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ECG Interpretation in Athletes – To Test or Not to Test?

가톨릭의대 김성환

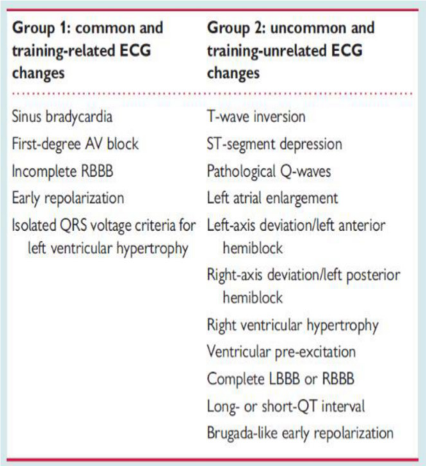
ECG interpretation in Athletes

- to test or not to test

가톨릭의대 서울성모병원

김 성 환

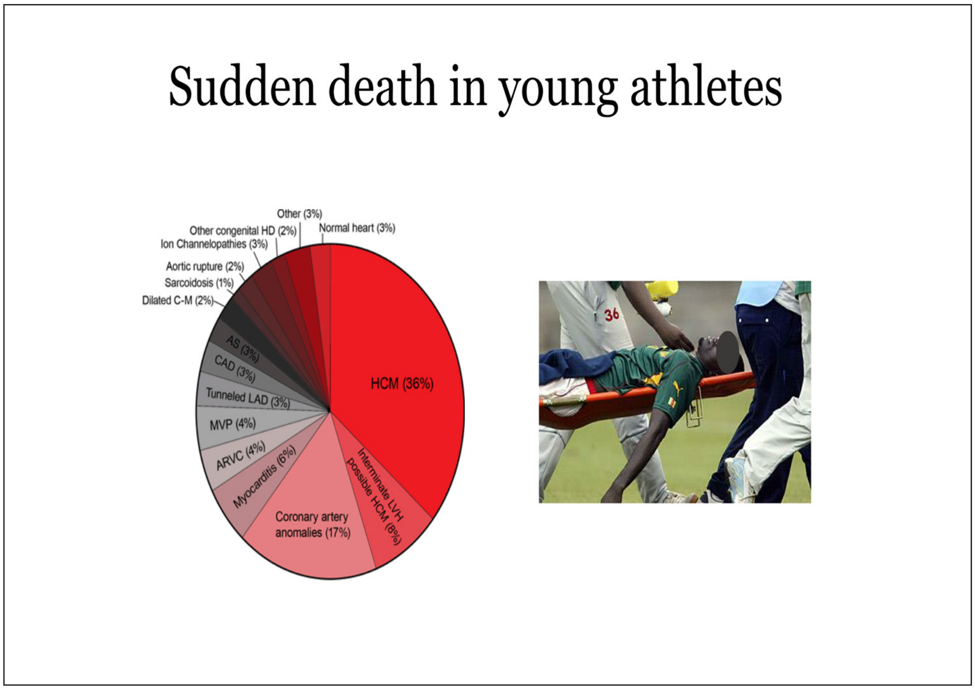
Classification of the athlete's ECG



Group 1: common and training-related ECG changes	**Group 2: uncommon and training-unrelated ECG changes**
Sinus bradycardia	T-wave inversion
First-degree AV block	ST-segment depression
Incomplete RBBB	Pathological Q-waves
Early repolarization	Left atrial enlargement
Isolated QRS voltage criteria for left ventricular hypertrophy	Left-axis deviation/left anterior hemiblock
	Right-axis deviation/left posterior hemiblock
	Right ventricular hypertrophy
	Ventricular pre-excitation
	Complete LBBB or RBBB
	Long- or short-QT interval
	Brugada-like early repolarization

Corrado et al. *EHJ* 2010

Memo



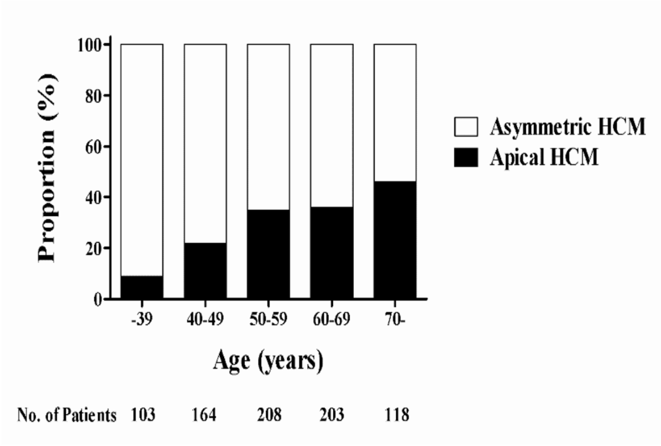
Sudden death in young athletes

Hypertrophic cardiomyopathy

- 1/500 in general population, family history in more than half
- Most common cause of SCD in young (esp. athlete)

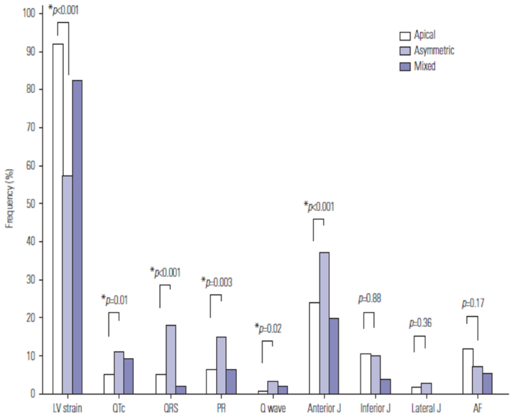
Memo

Age at the diagnosis



Kim et al. *Int Heart J.* 2013

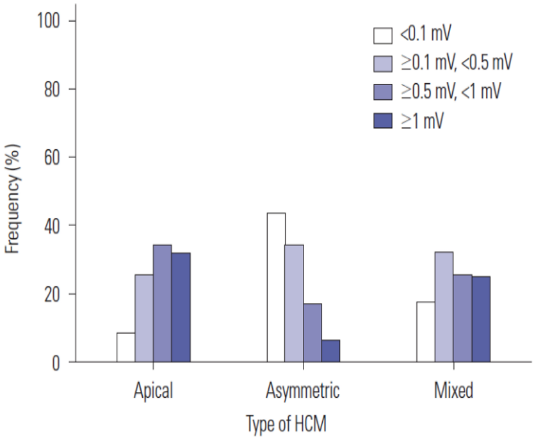
ECG abnormalities in HCM (1)



Kim SH et al. *YMJ* 2015

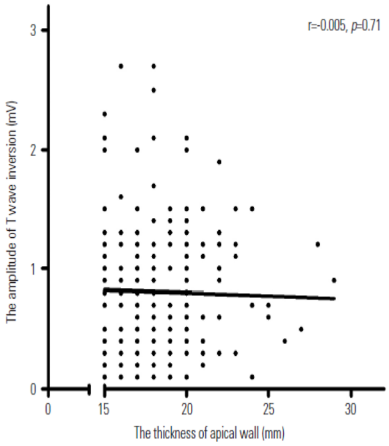
Memo

ECG abnormalities in HCM (2)



Kim SH et al. *YMJ* 2015

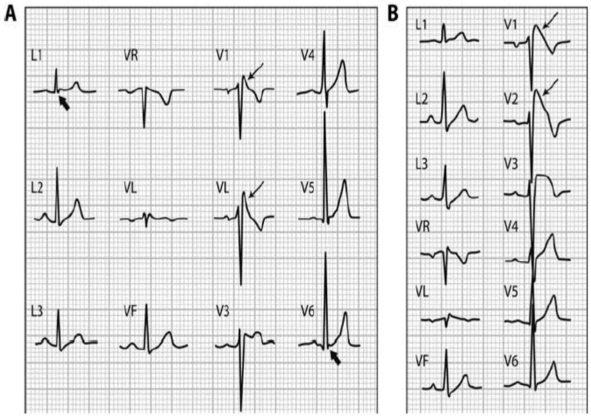
ECG abnormalities in HCM (3)



Kim SH et al. *YMJ* 2015

Memo

Brugada ECG


A
L1
VR
V1
V4
L2
VL
VL
V5
L3
VF
V3
V6
B
L1
V1
L2
V2
L3
V3
VR
V4
VL
V5
VF
V6

Corrado et al. *EHJ* 2010

Memo