



SIMPÓSIO DE MEDICINA
CARDIOVASCULAR DE COIMBRA 2018



11e12
MAIO 2018
VILA GALÉ COIMBRA
Cursos Pré-Simpósio
10 MAIO

Morte Súbita

- Causas e Abordagem

Peter

Departamento de Pacing e Electrofisiologia

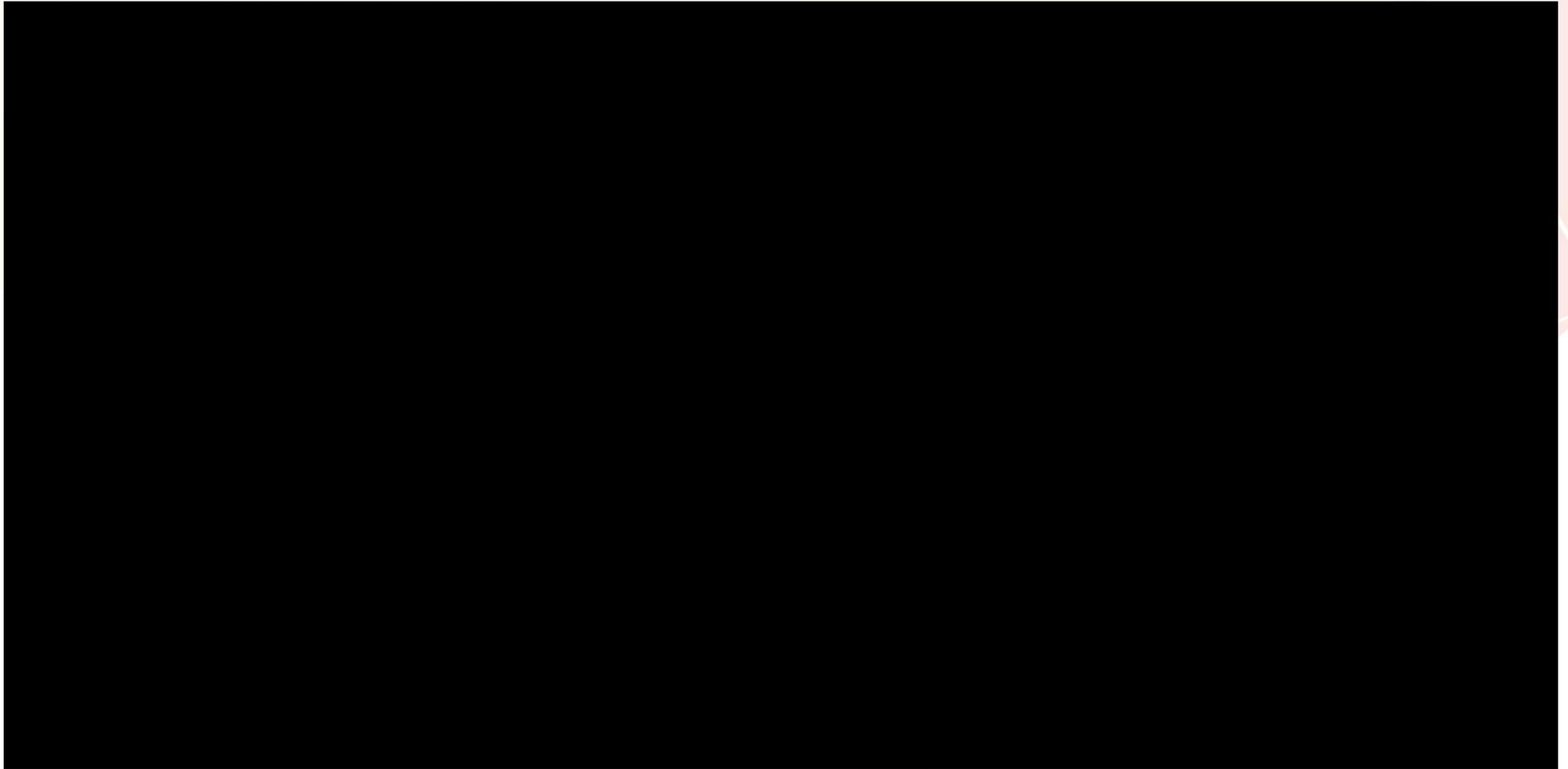
Centro Hospitalar e Universitario de Coimbra

SIMPÓSIO DE MEDICINA
CARDIOVASCULAR DE COIMBRA 2018

Mail

Peter@chuc.min-saude.pt

SIMPÓSIO DE MEDICINA
CARDIOVASCULAR DE COIMBRA 2018



Morte Súbita

Peter, Centro Hospitalar e Universitário de Lisboa

SIMPÓSIO DE MEDICINA
CARDIOVASCULAR DE COIMBRA 2018



Morte Súbita

Peter, Centro Hospitalar e Universitário de Lisboa

Epidemiologia Morte súbita cardíaca \neq Morte Súbita

Definição – Morte súbita inexplicada numa pessoa supostamente saudável em 1 hora após o início dos sintomas, ou morte não testemunhada em 24h

Falta de registos

Representa 50% das mortes por doença cardiovascular

Cerca de 350 000 mortes por ano na Europa

Excluir outras causas de morte súbita

Morin DP, et al. Prediction and Prevention of Sudden Cardiac Death. *Card Electrophysiol Clin* 2017;9:631-638.
Katrakis GD, et al. A Clinical Perspective on Sudden Cardiac Death. *Arrhythmia & Electrophysiology Review*.
Sherwin DE, et al. Sudden Cardiac Death in Children and Adolescents. *Card Electrophysiol Clin* 2017; 9: 569-579.

% Risk of SCD / year

Actual Numbers with SCD

General population

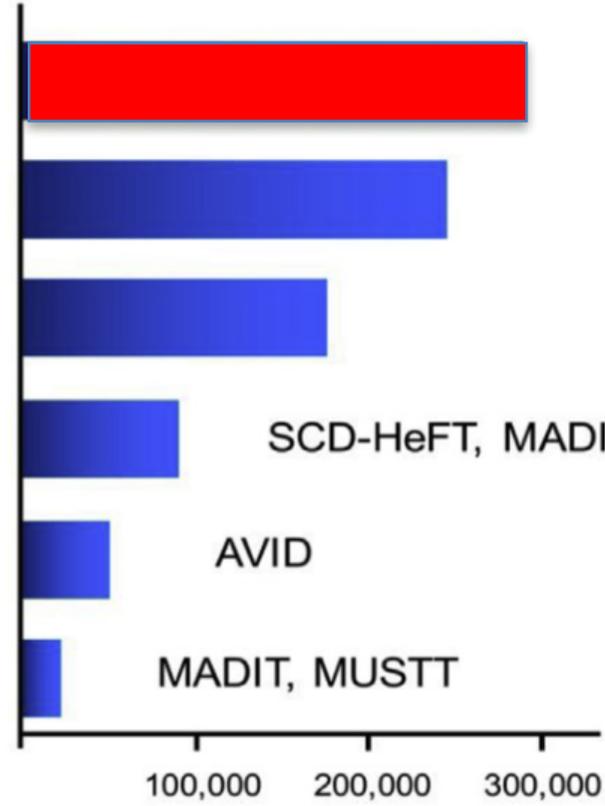
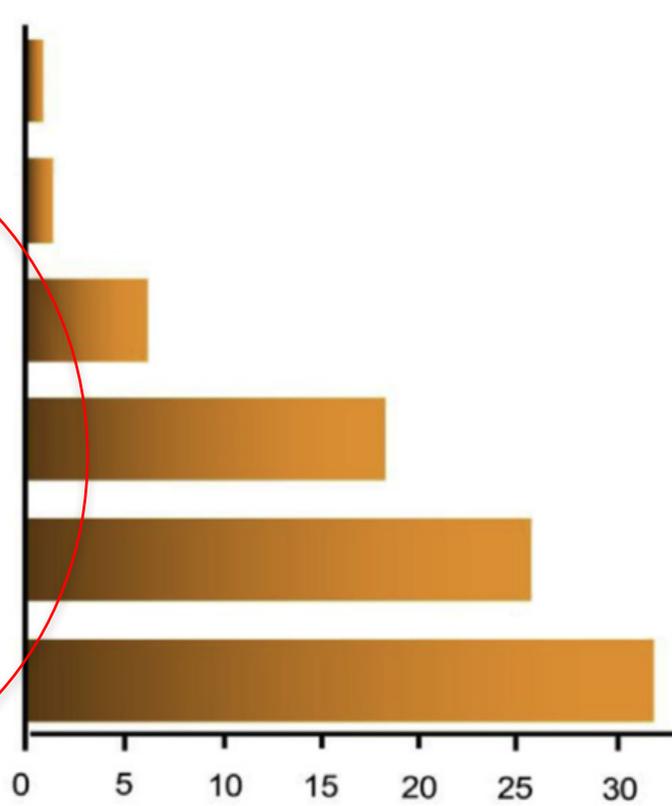
High CAD Risk

Hx CAD Event

EF_≤35, CHF

Arrest Survivors

High Risk post MI



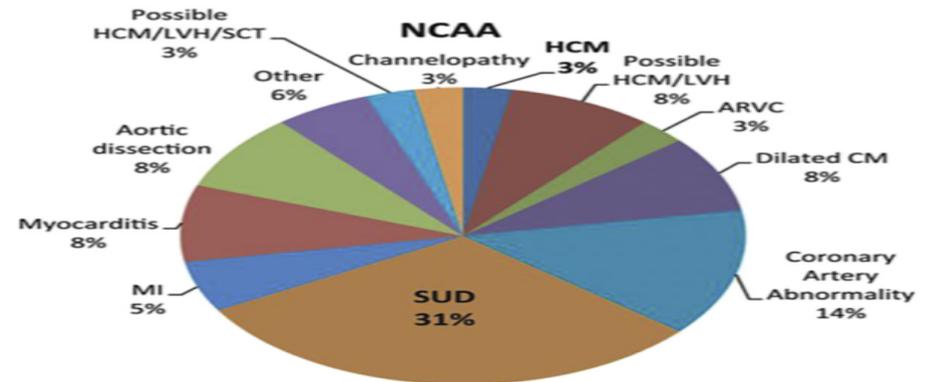
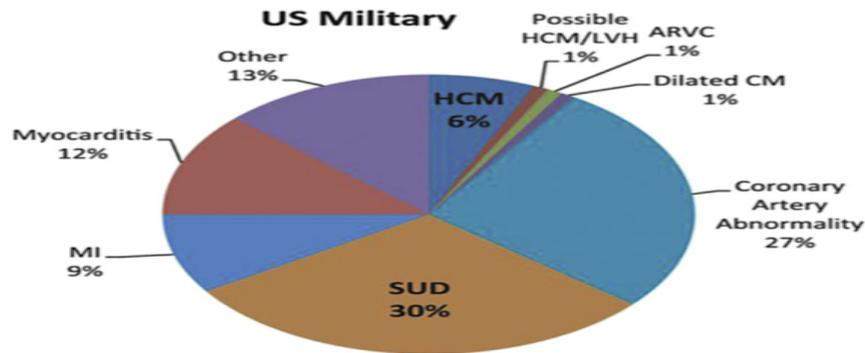
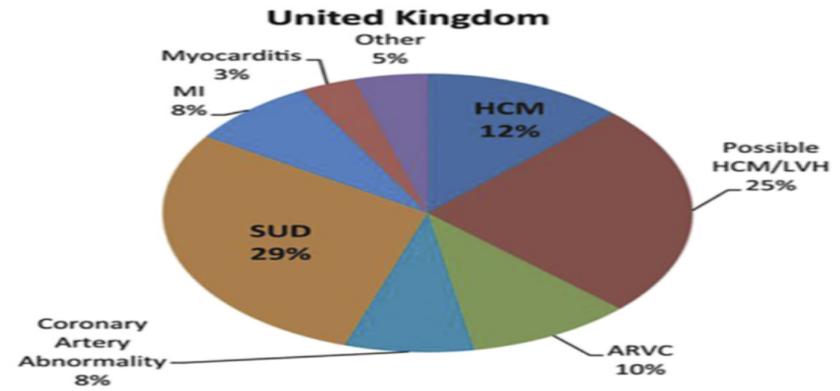
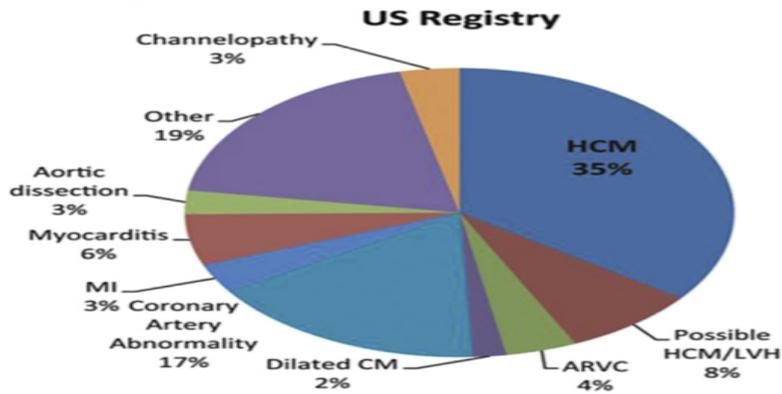
SCD-HeFT, MADIT 2, DANISH

AVID

MADIT, MUSTT

Morin DP, et al. Prediction and Prevention of Sudden Cardiac Death. Card Electrophysiol Clin 2017;9:631-638.

Etiologia de MSC, de acordo com a faixa etária



Sherwin DE, et al. Sudden Cardiac Death in Children and Adolescents. Card Electrophysiol Clin 2017; 9: 569-579..

SIMPÓSIO DE MEDICINA CARDIOVASCULAR DE COIMBRA 2018

Ischaemic Heart Disease

Myocardial infarction (including non-ST segment elevation myocardial infarction)

Anomalous coronary origin

Coronary spasm

Inherited Channelopathies

Long QT syndrome

Short QT syndrome

Brugada syndrome

Early repolarisation syndrome

Catecholaminergic polymorphic ventricular tachycardia

Cardiomyopathies

Alcoholic

Hypertrophic

Idiopathic

Obesity-related

Fibrotic

Arrhythmogenic right ventricular cardiomyopathy

Myocarditis

Heart Failure

Especially with left ventricular ejection fraction <35 %

Valve disease

Aortic stenosis

Congenital diseases

Tetralogy of Fallot

Other causes

Severe electrolyte disturbances

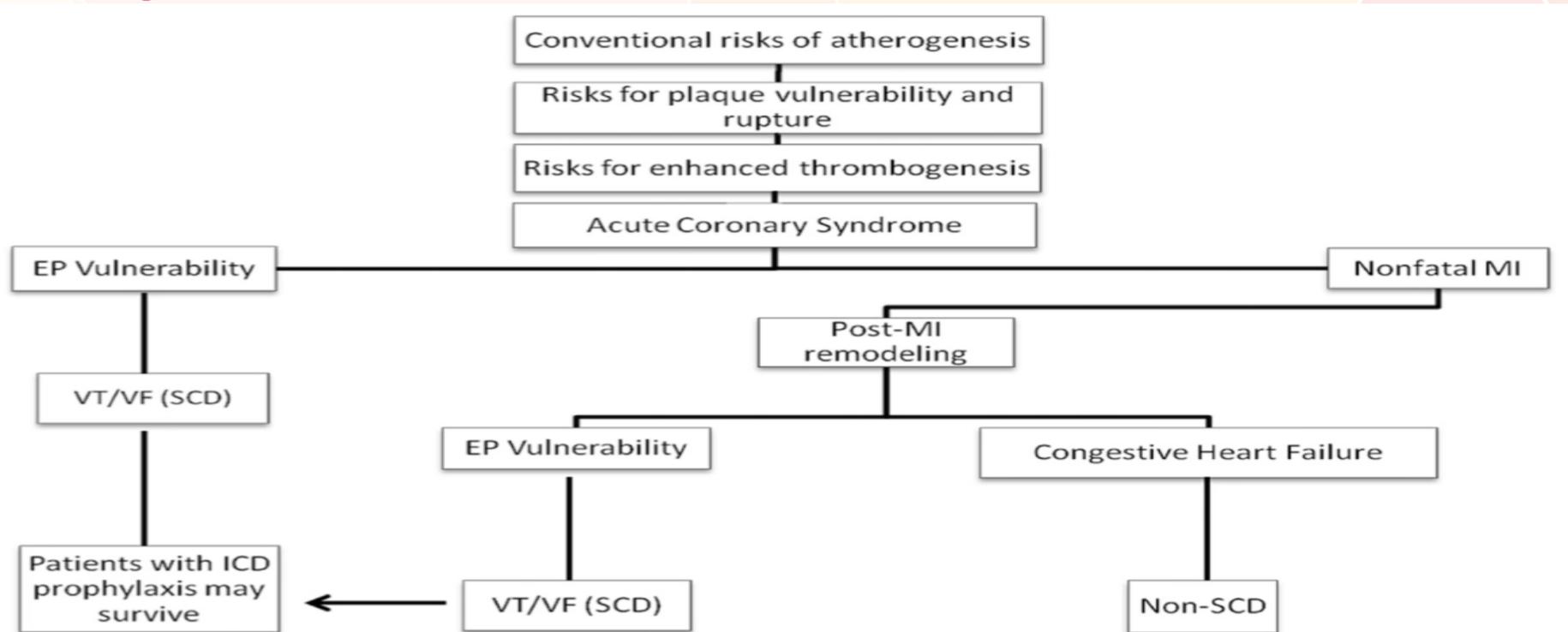
Massive pulmonary embolus

Vigorous activity in sedentary individuals

Acute psychosocial and economic stress

Morin DP, et al. Prediction and Prevention of Sudden Cardiac Death. Card Electrophysiol Clin 2017;9:631-638.
Katrisis GD, et al. A Clinical Perspective on Sudden Cardiac Death. Arrhythmia & Electrophysiology Review.

Doença Arterial Coronária



El-Sherif N, et al. Sudden Cardiac Death in Ischemic Heart Disease. Card Electrophysiol Clin 2017;9:631-638.

SIMPÓSIO DE MEDICINA CARDIOVASCULAR DE COIMBRA 2018

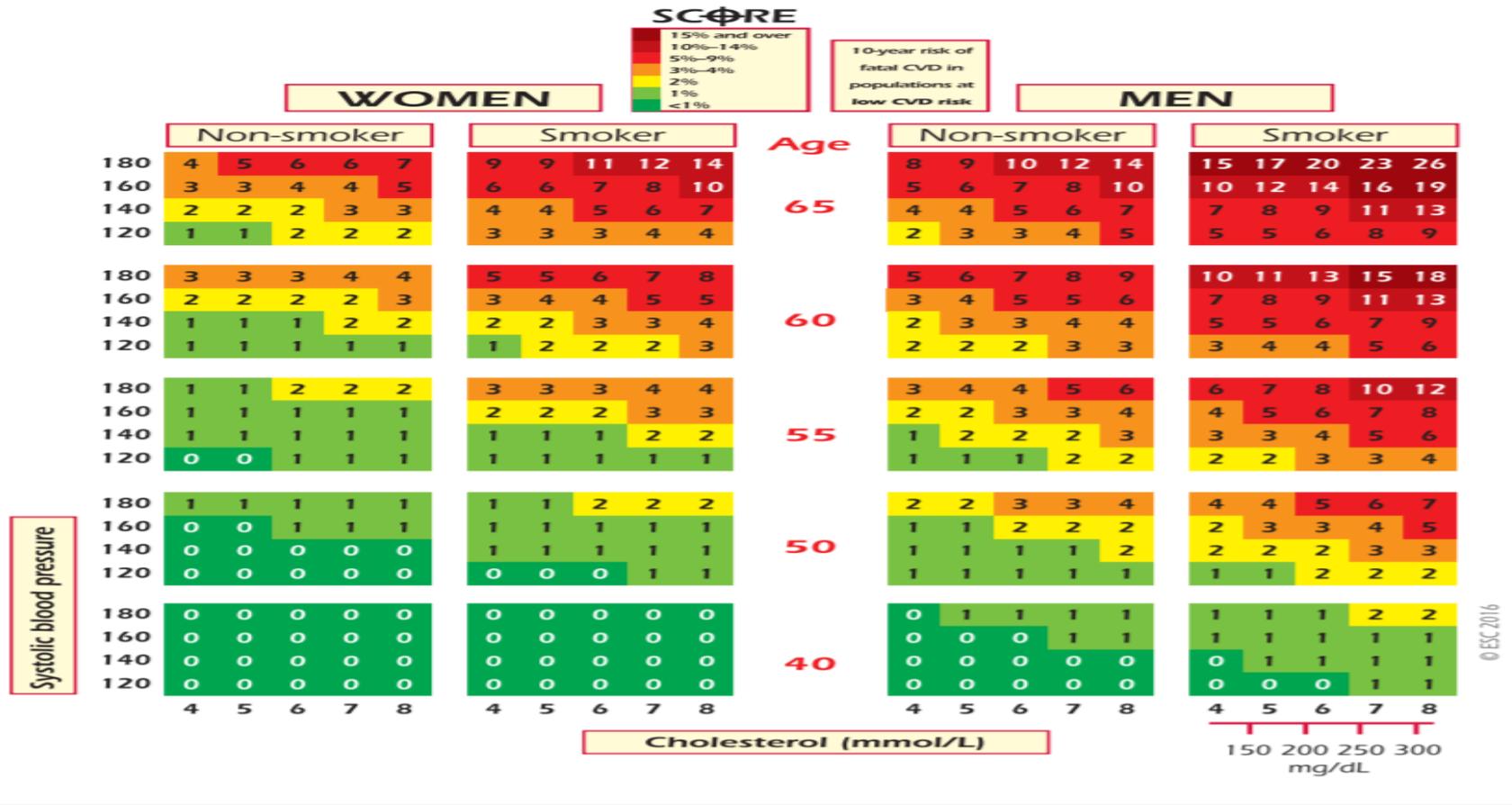
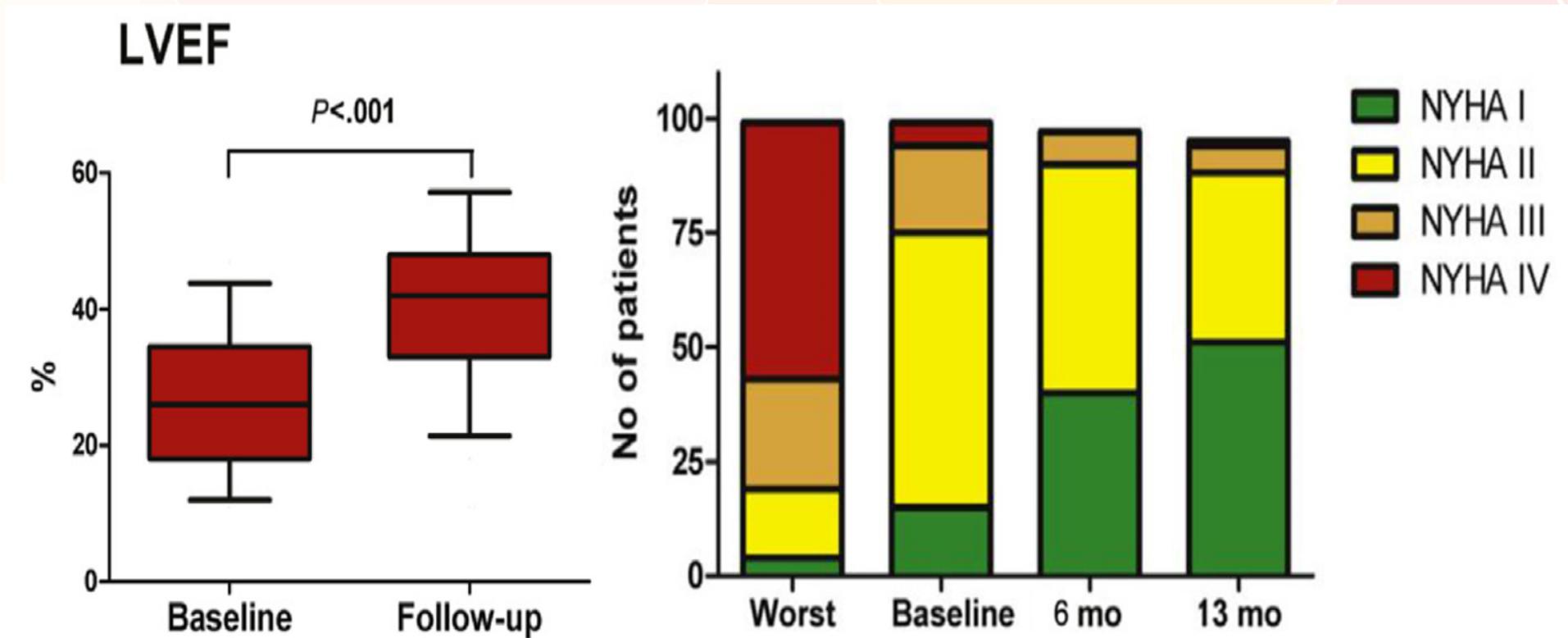
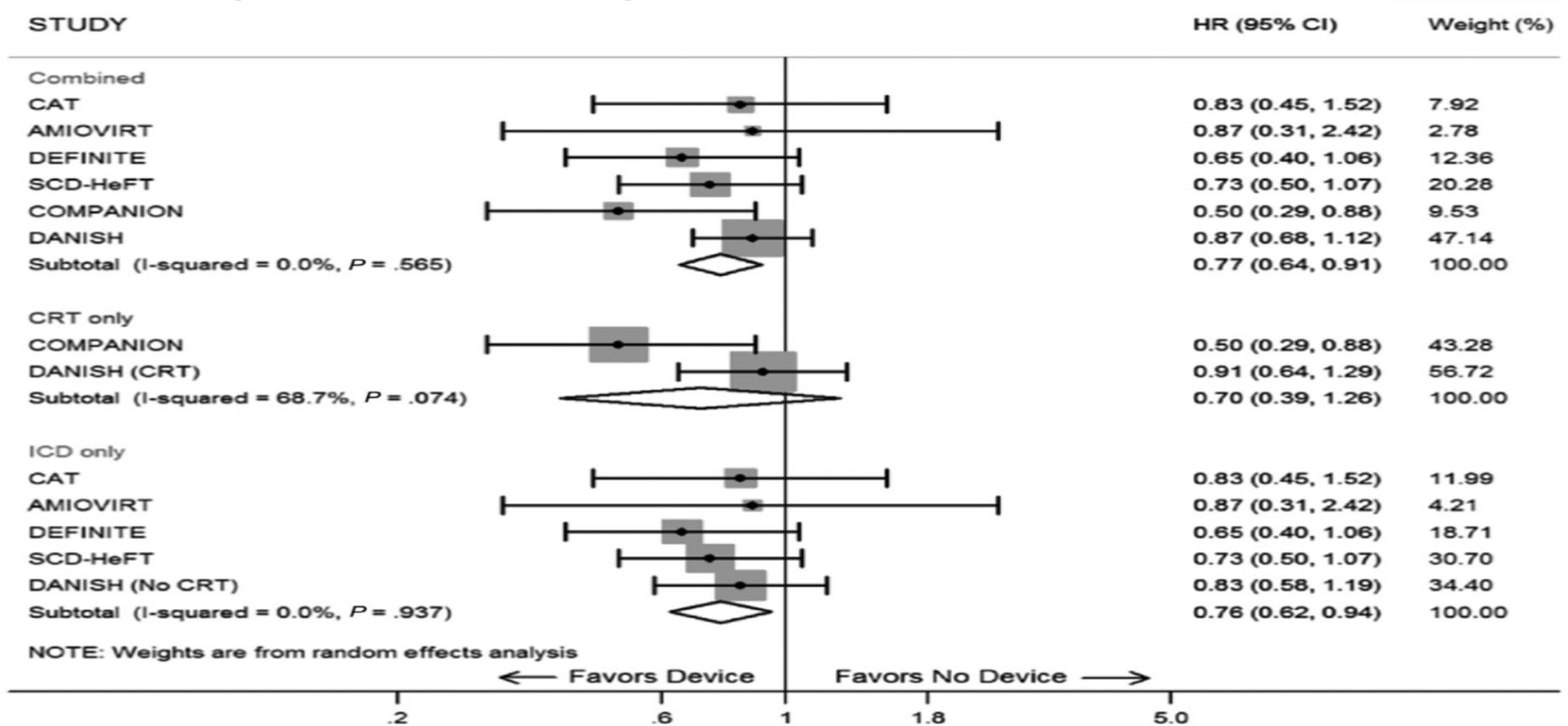


Figure 2 SCORE chart: 10-year risk of fatal cardiovascular disease in populations of countries at low cardiovascular risk based on the following risk factors: age, sex, smoking, systolic blood pressure, total cholesterol. CVD = cardiovascular disease; SCORE = Systematic Coronary Risk Estimation.

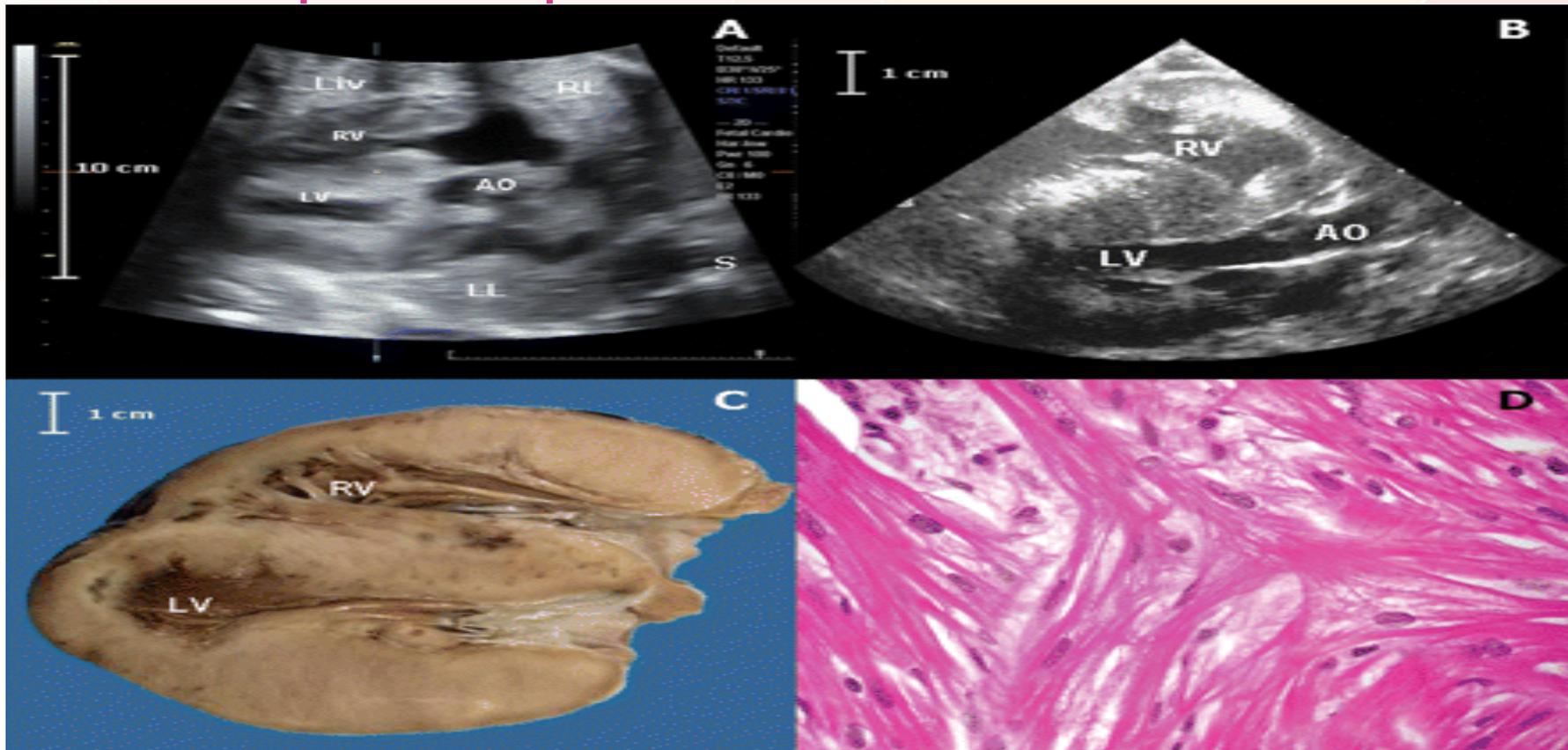
Cardiopatia Não Isquémica



Cardiopatia Não Isquémica



Miocardiopatia Hipertrófica



Morte Súbita

Peter, Centro Hospitalar e Universitário de Lisboa

Miocardiopatia Hipertrófica

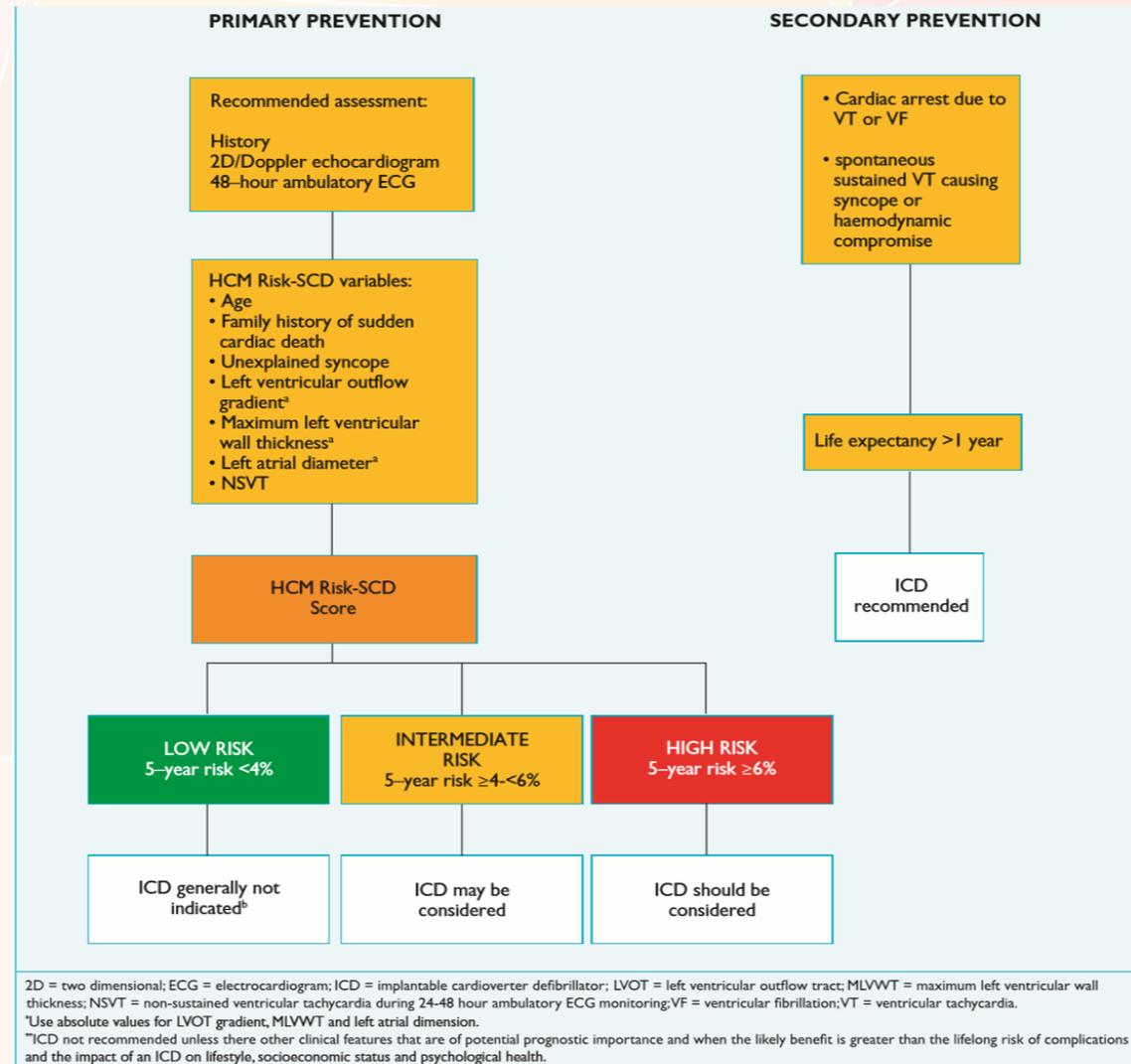
Definida pela presença de espessamento da parede ventricular esquerda que não é explicada somente por condições de sobrecarga

Prevalência de 0.3-0.5 100 000 hab
1 em 500 hab

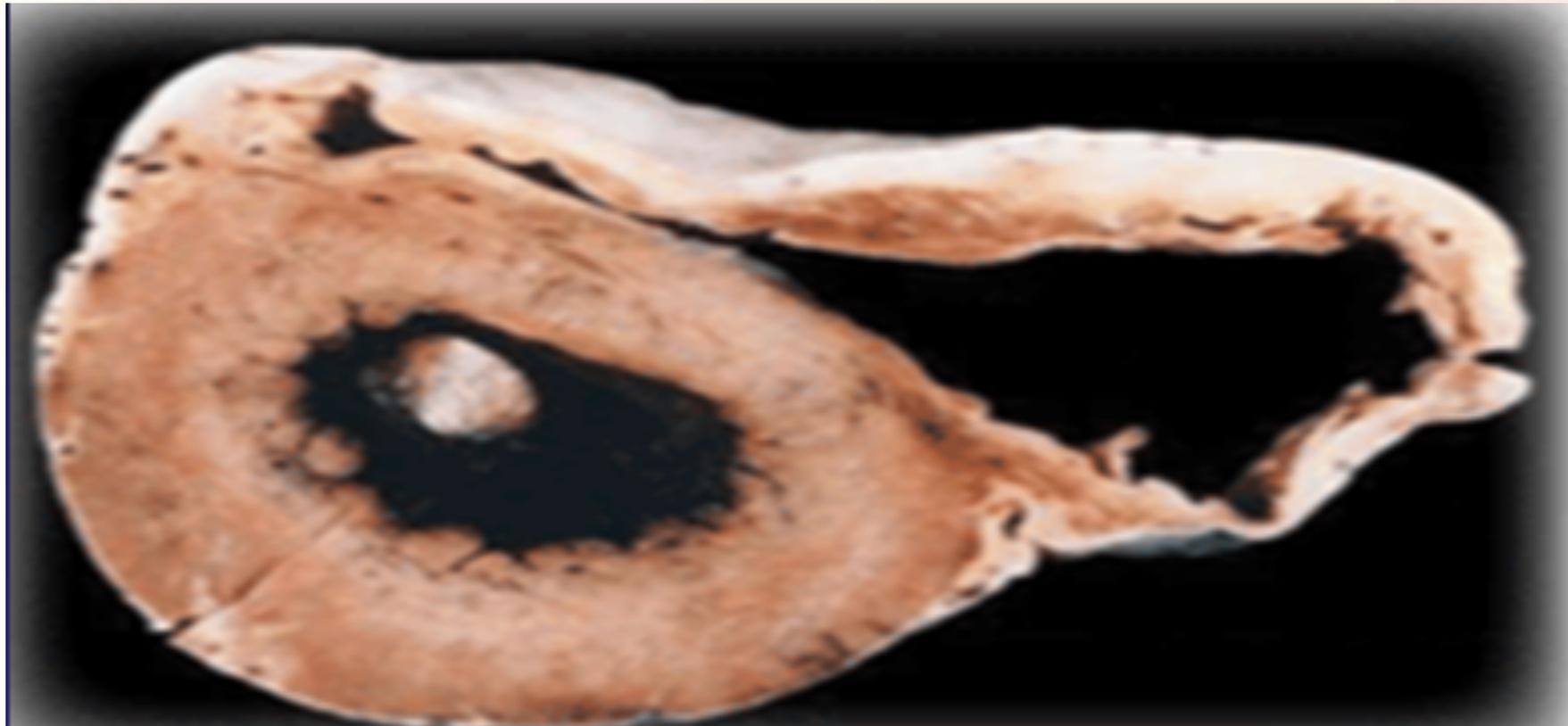
Mortalidade CV 1-2% ano
50% em MS

Morte Súbita

Elliot PM, et al. 2014 ESC Guidelines on diagnosis and management of hypertrophic cardiomyopathy. Eur Heart J 2014; 35:2733-2779.



Displasia Arritmogénica do Ventrículo Direito



Morte Súbita

Peter, Centro Hospitalar e Universitário de Lisboa

Displasia Arritmogénica do Ventrículo Direito

Prevalência de 1 em 1000 hab

Mortalidade CV 1% ano

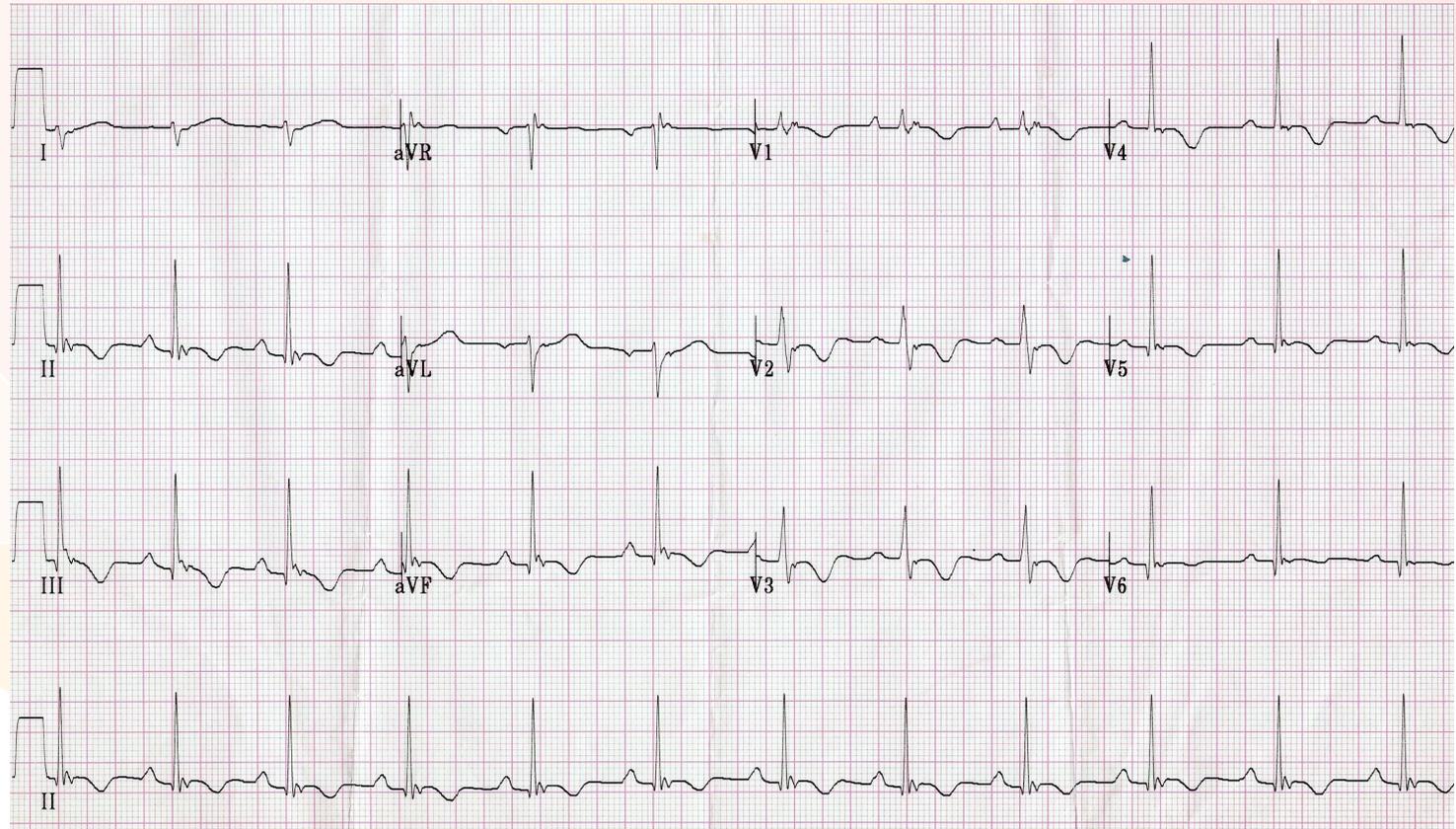
Alterações estruturais no VD

Alterações ECG

ESV

História familiar

Morte Súbita



Peter, Centro Hospitalar e Universitário de Lisboa

Síndrome de Brugada

Prevalência 1:1000 a 1: 10 000

Responsável por cerca de 20% das MSC na ausência de doença estrutural

Incidência anual de eventos arrítmicos
13.5% em S. Brugada com hx de PCR,
3.2% com hx de síncope,
1% assintomáticos

Diagnosis of Brugada Syndrome

Recommendations	Class ^a	Level ^b	Ref. ^c
Brugada syndrome is diagnosed in patients with ST-segment elevation with type 1 morphology ≥ 2 mm in one or more leads among the right precordial leads V1 and/or V2 positioned in the second, third, or fourth intercostal space, occurring either spontaneously or after provocative drug test with intravenous administration of sodium channel blockers (such as ajmaline, flecainide, procainamide or pilsicainide).	I	C	This panel of experts

^aClass of recommendation.

^bLevel of evidence.

^cReference(s) supporting recommendations.

Priori SG, et al. 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death. European Heart Journal 2015; 36 (41): 2793-2867.

Síndrome de Brugada



TYPE 1 ECG

Priori SG, et al. 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death. European Heart Journal 2015; 36 (41): 2793-2867.

QT longo e QT curto

$QTc \geq 460ms$

$QTc \leq 360ms$

Diagnosis of Long QT Syndrome (in the absence of secondary causes for QT prolongation)

Recommendations	Class ^a	Level ^b	Ref. ^c
LQTS is diagnosed with either – $QTc \geq 480$ ms in repeated 12-lead ECGs or – LQTS risk score >3 . ⁴³¹	I	C	This panel of experts
LQTS is diagnosed in the presence of a confirmed pathogenic LQTS mutation, irrespective of the QT duration.	I	C	This panel of experts

Diagnosis of Short QT Syndrome

Recommendations	Class ^a	Level ^b	Ref. ^c
SQTS is diagnosed in the presence of a $QTc \leq 340$ ms.	I	C	This panel of experts

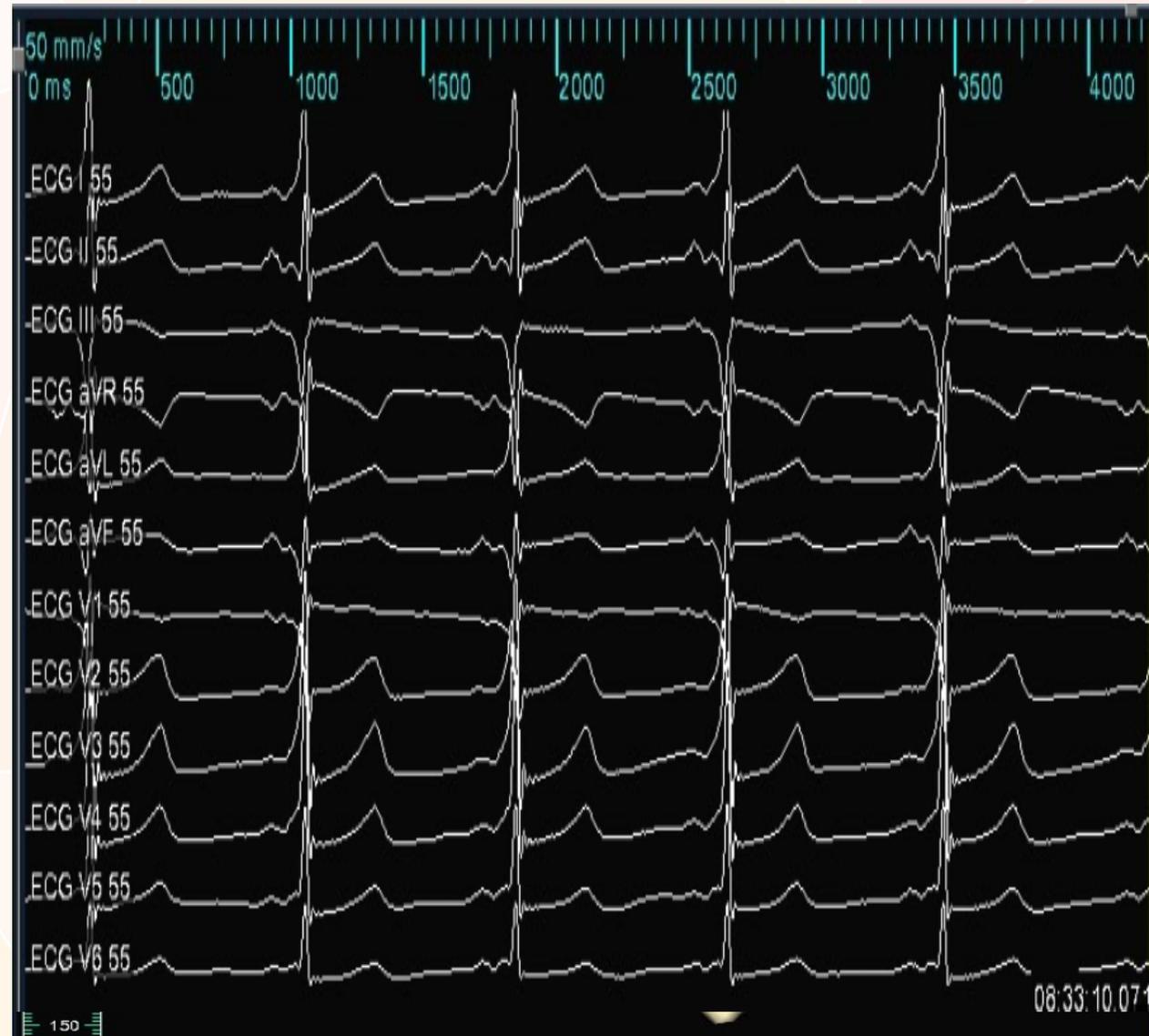
Priori SG, et al. 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death. European Heart Journal 2015; 36 (41): 2793-2867.

WPW

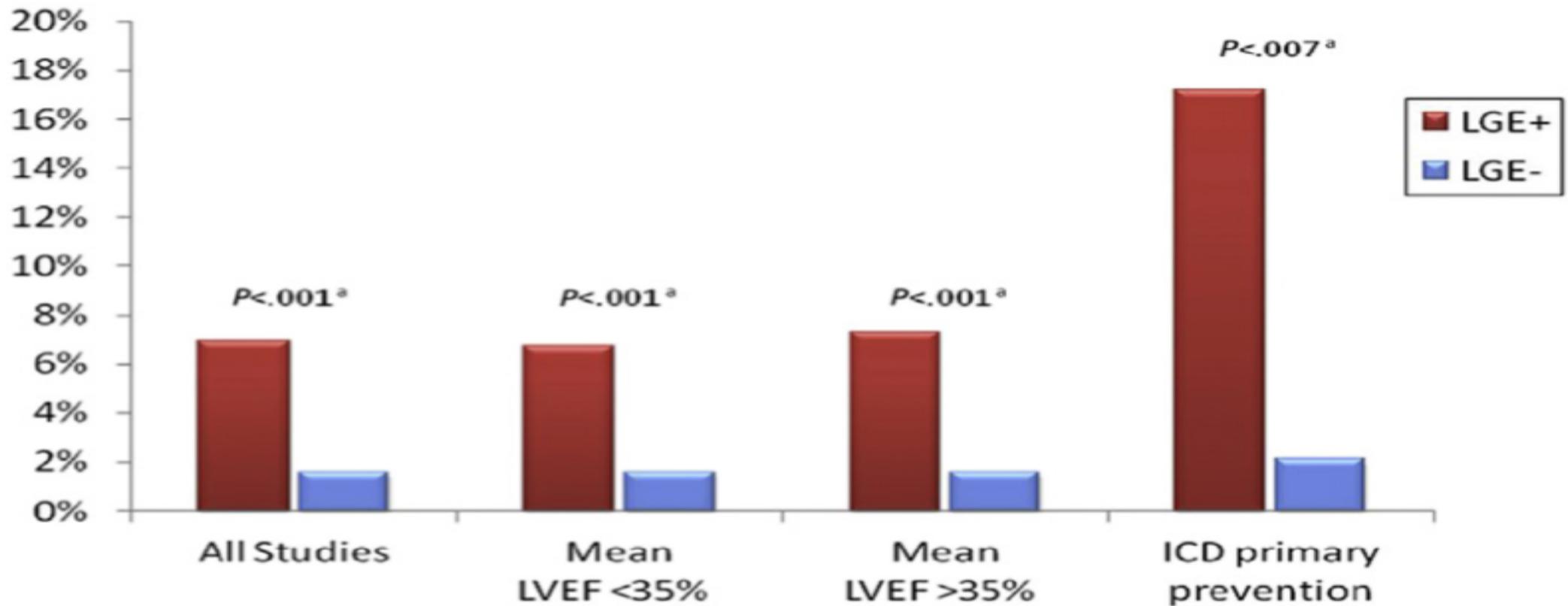
Prevalência 1-3:1000

Incidência anual MS 0.5 %

0.1% em pacientes assintomáticos



Pouca evolução nos últimos anos



Dado as dificuldades no rastreio.....



Morte Súbita



Peter, Centro Hospitalar e Universitário de Lisboa

Como rastrear algo que não sabemos?

Controle de FRCV

Risco de Doença Arterial Coronária

Sintomas de alerta: palpitações, síncope, dispneia, dor precordial

História familiar de morte súbita



ECG 12 derivações
Ex. Complementares

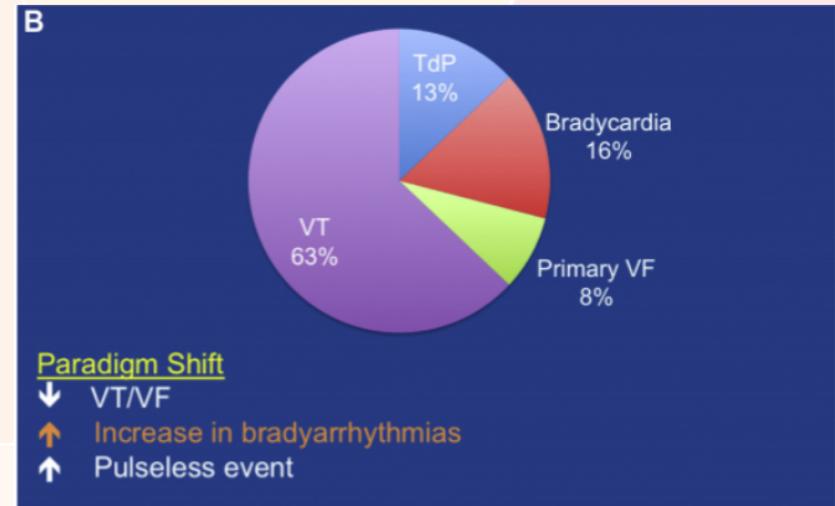
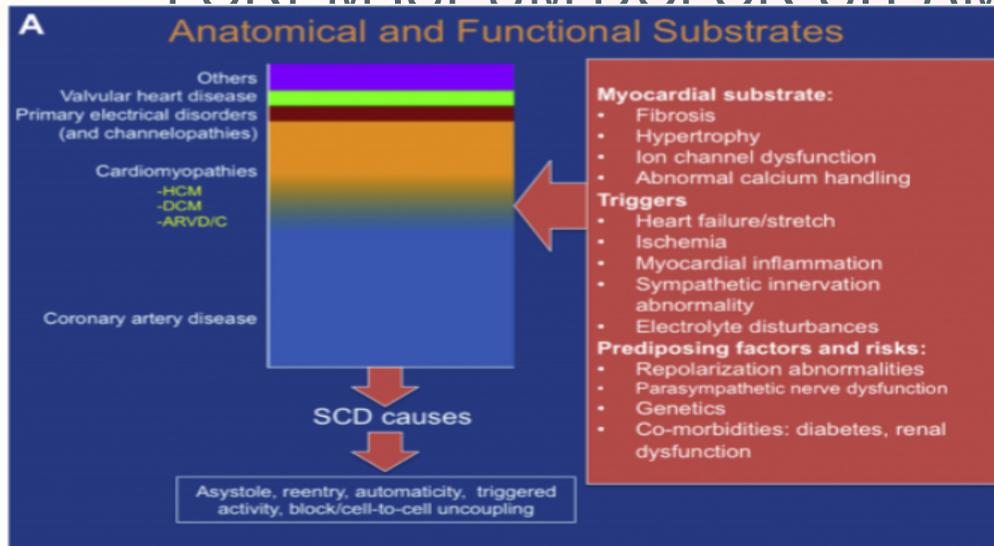






LOREM ISPUM DOLOR SIT AMET

LOREM ISPUM DOLOR SIT AMET SED DIAM



Pérez-Riera AR, et al. Electrocardiographic Markers of Sudden Cardiac Death (including Left Ventricular Hypertrophy). Card Electrophysiol Clin 2017; 9: 605-629.

Validação do score para MCH

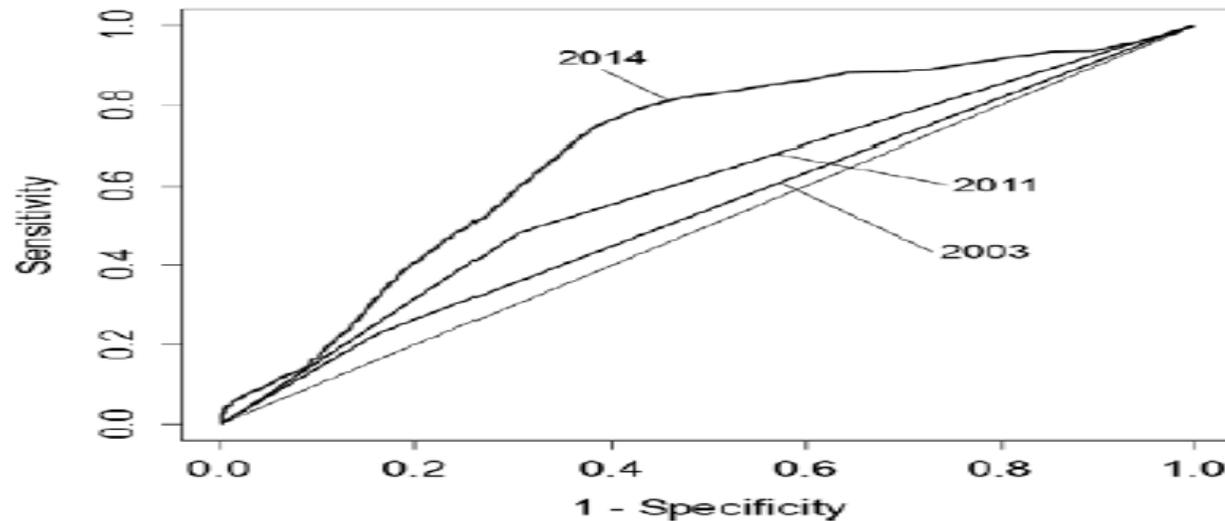


Figure 1. Time-dependent receiver operating characteristic curves for the risk prediction models of the 2014 European Society of Cardiology (ESC) guidelines (area under the curve [AUC]=0.69), 2003 American College of Cardiology (ACC)/ESC guidelines (AUC=0.55), and 2011 ACC Foundation/American Heart Association guidelines (AUC=0.60), and the reference line (AUC=0.5).