
Conoscere e Curare il Cuore 2019
VENERDI' 1 MARZO
L'ARRESTO CARDIACO A RIPOSO E DURANTE ATTIVITÀ SPORTIVA. CAUSE E PREVENZIONE
Cristina Basso
UOC Patologia Cardiovascolare
Azienda Ospedaliera-Università degli Studi di Padova

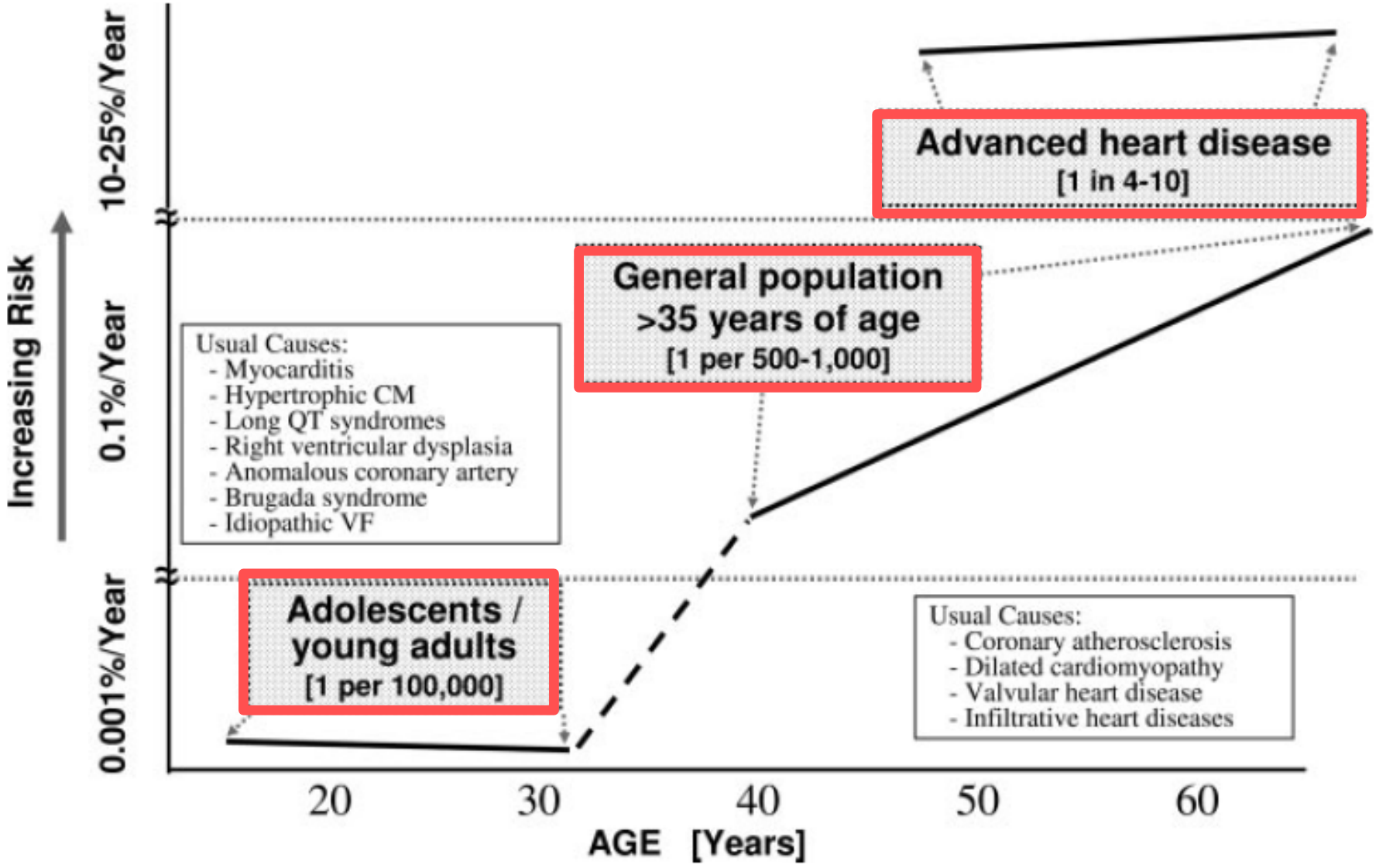
"Mens sana in corpore sano"

- Is a sign of high civilization (olympic games of the Ancient Greece)
- Enjoys not only the sportsmen but also the observers
- Makes contact with nature, gives well-being and improves body agility
- Is frequently collective, thus favouring social relationship
- Continuous physical activity decreases serum LDL and increases HDL cholesterol

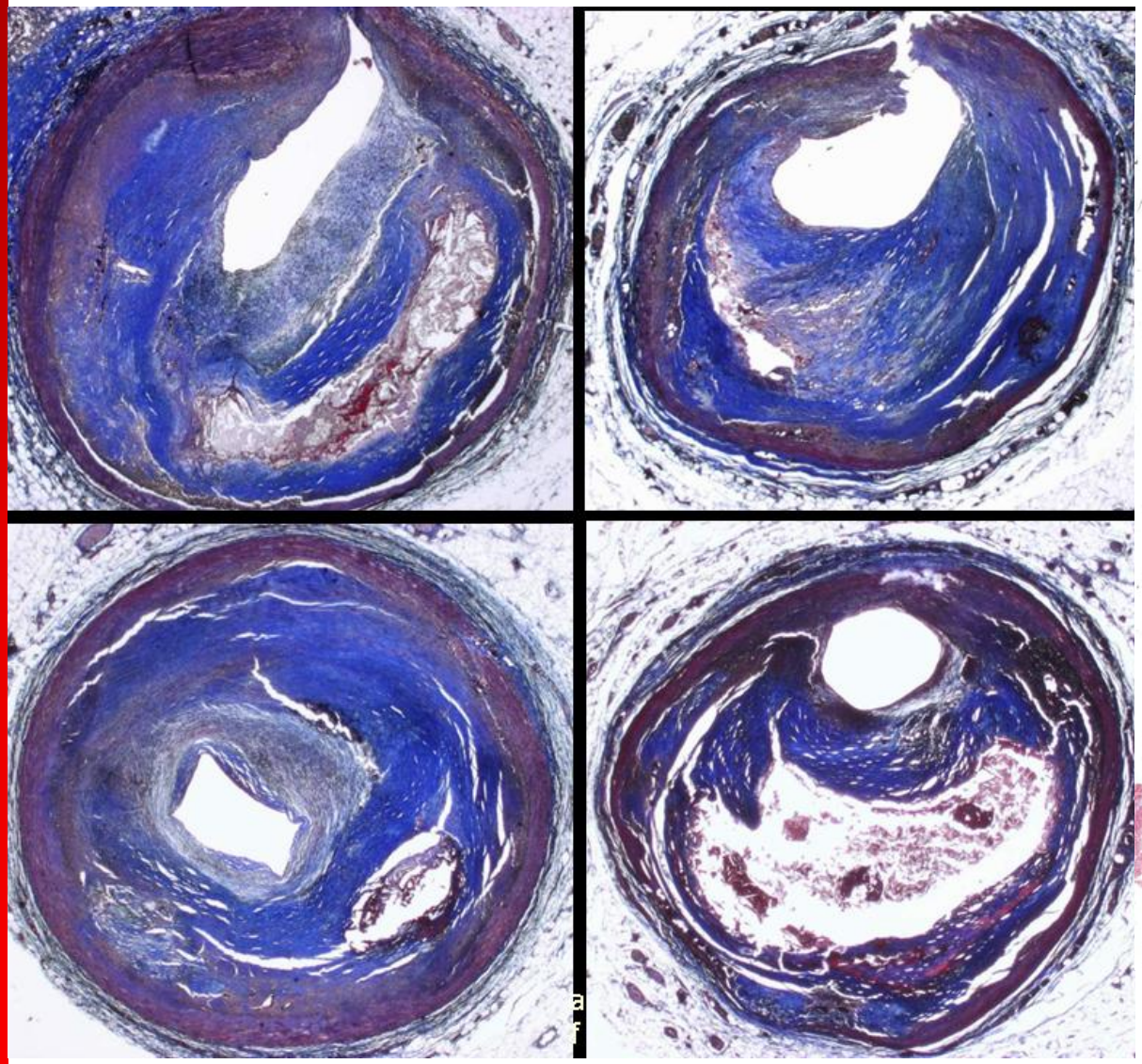
The Paradox of Exercise

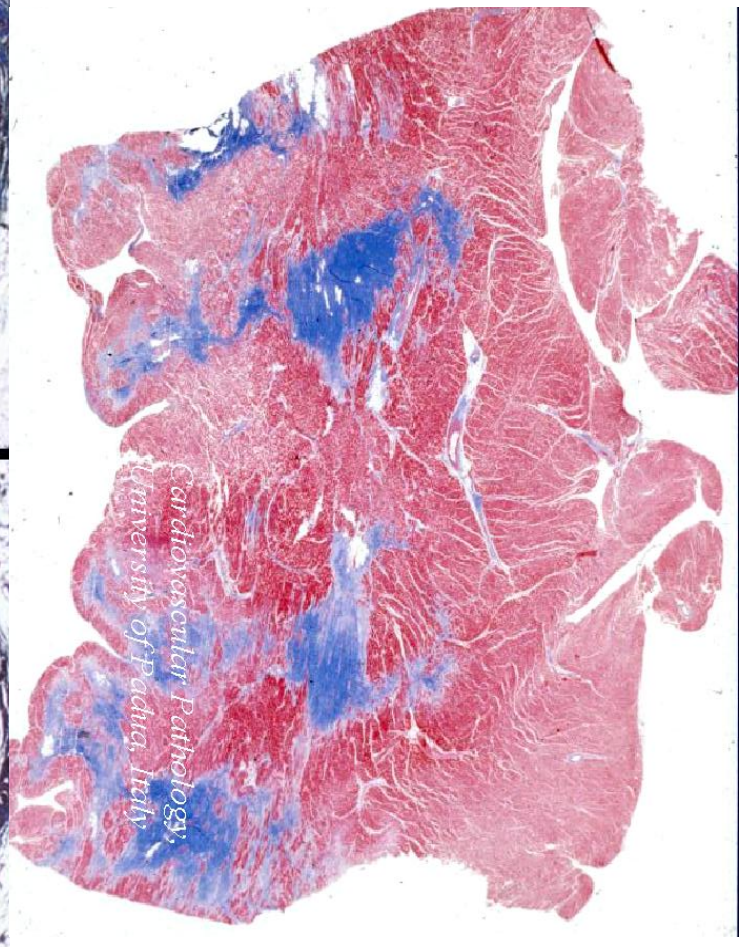
"**A two-edged sword**: it can simultaneously *offer protection* from the risk of sudden death in those who regularly engage in exercise and can *increase the short-term risk* of sudden death due to underlying heart disease"

B. Maron, NEJM 343:1409-1411

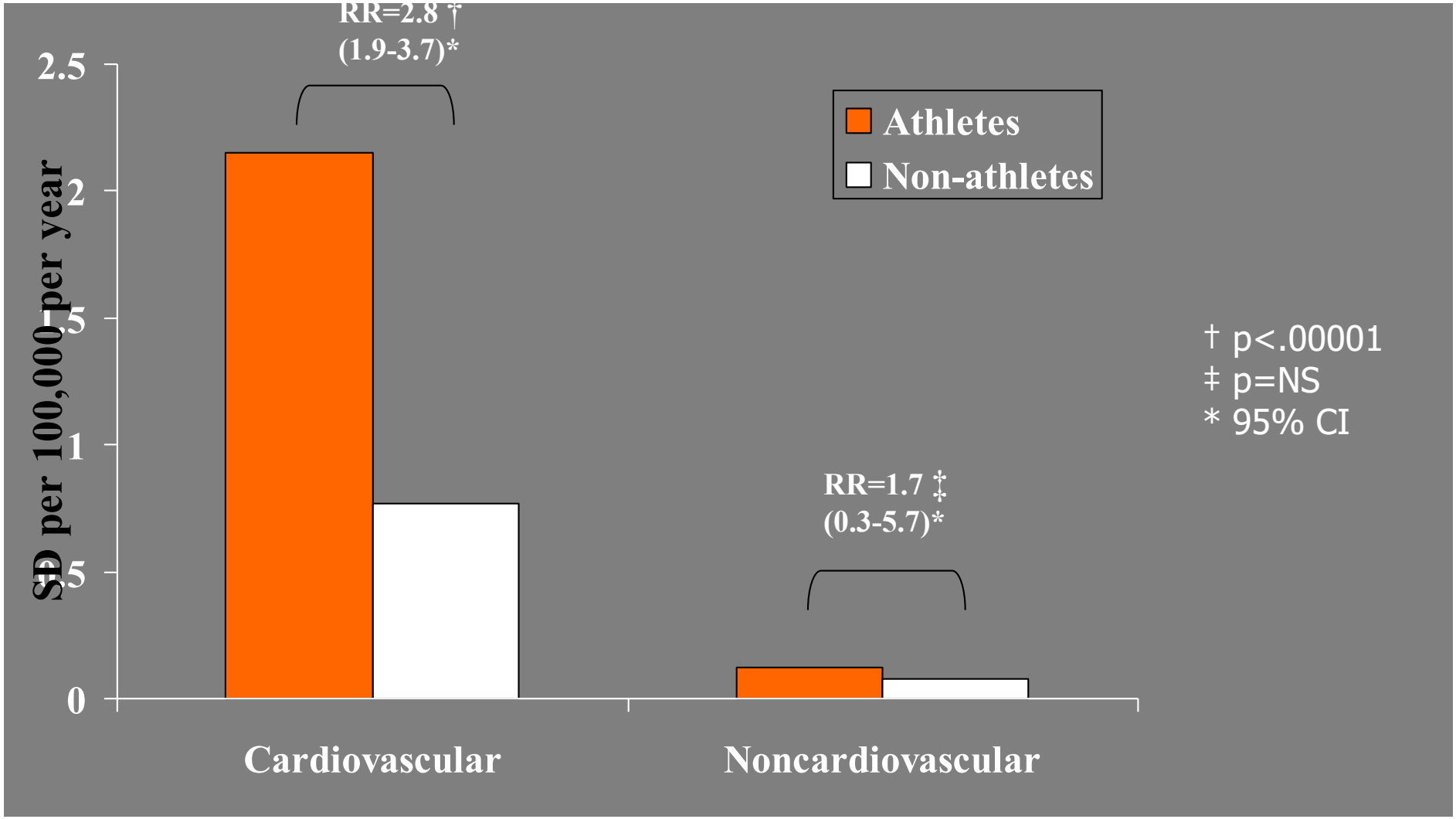


Myerburg RJ, Kessler KM, Castellanos A. Sudden cardiac death, Sctructure, function and time-dependence of risk. *Circulation.* 1992;85(Suppl 1):I2-I10.



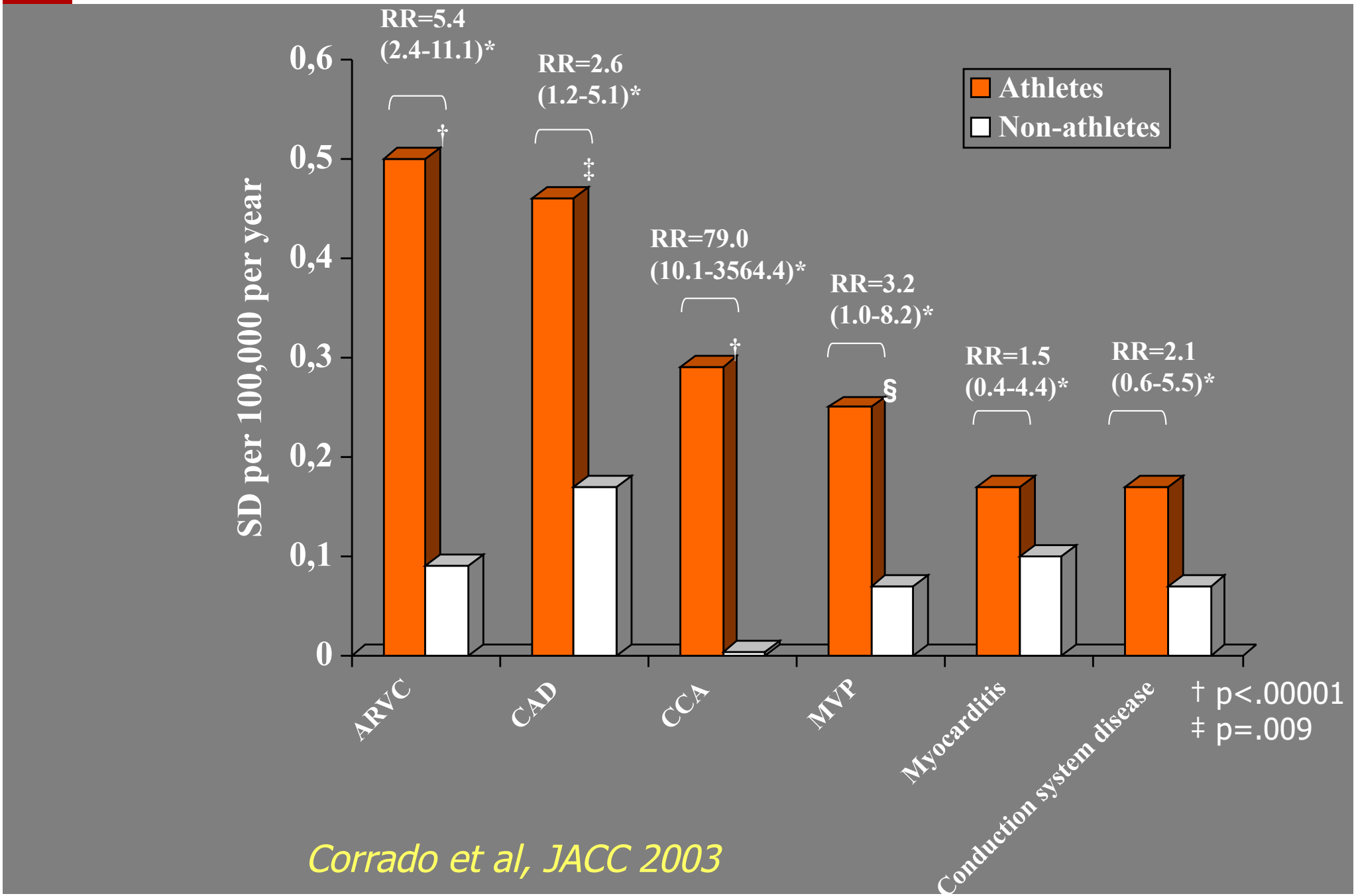


Relative Risk of Sport-related SD



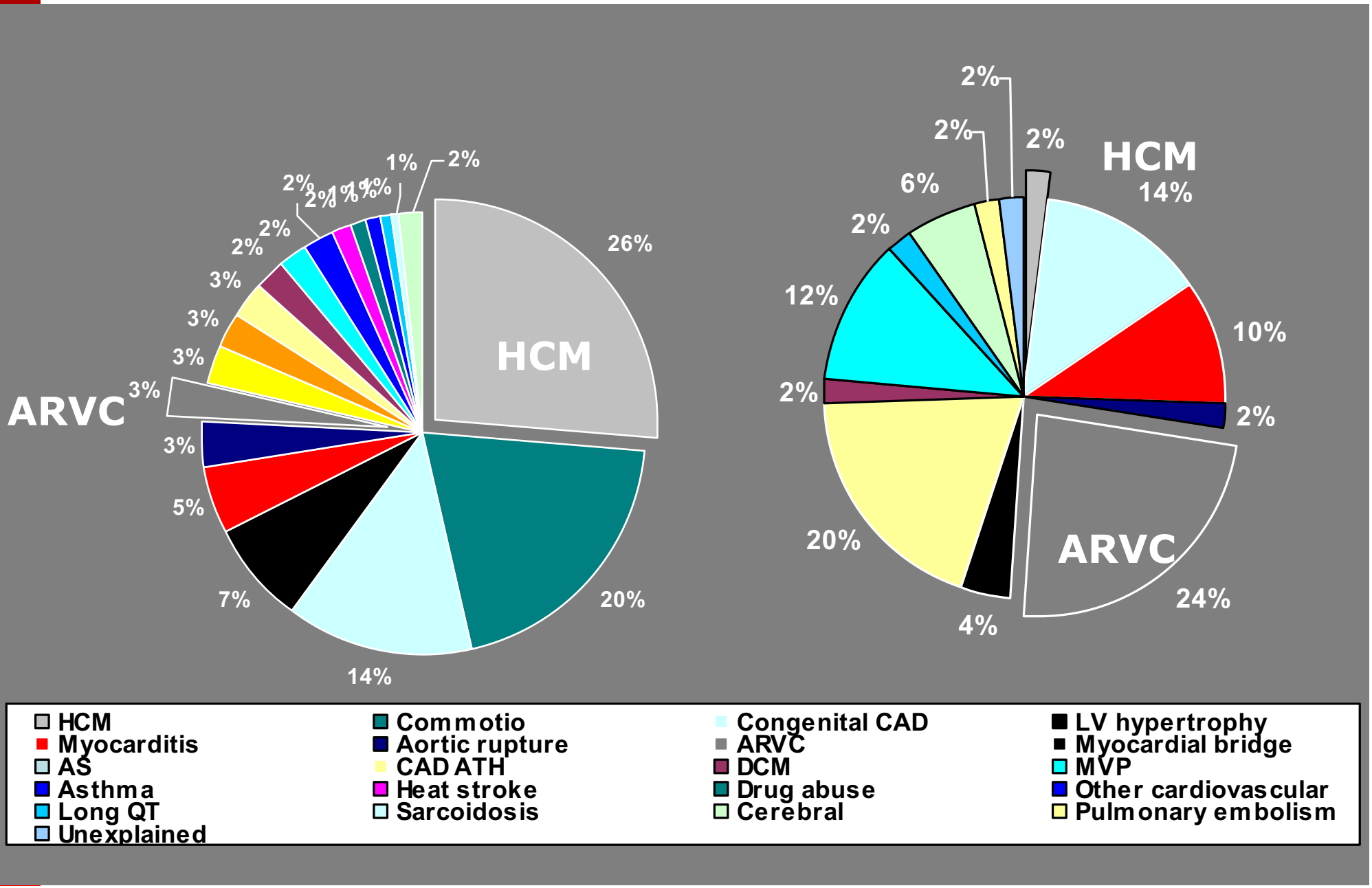
Corrado et al, JACC 2003

Relative Risk of Sport-related SD



Corrado et al, JACC 2003

SD in Athletes- USA vs Italy Experience



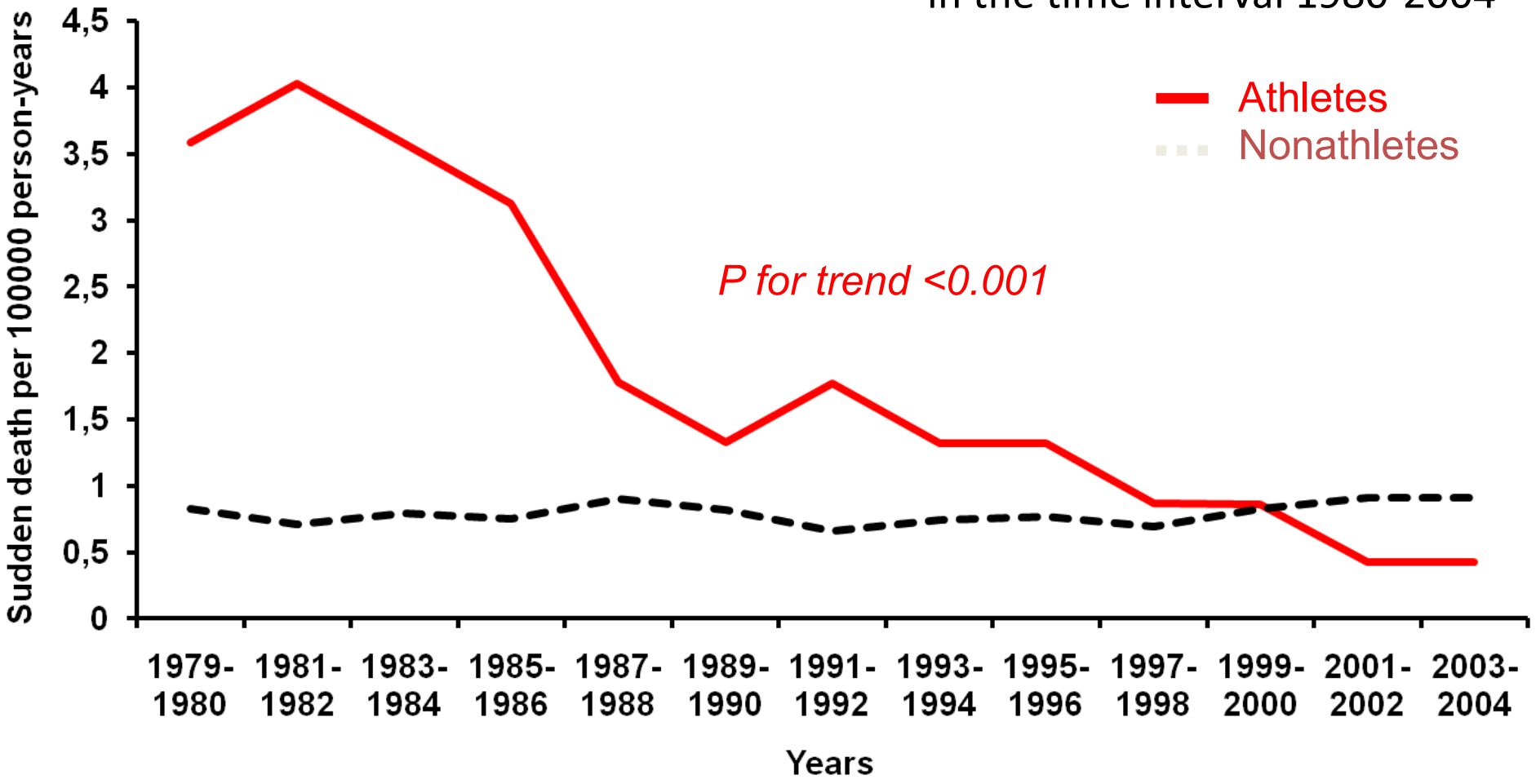
SCREENING FOR HCM IN YOUNG ATHLETES

Identification and disqualification of athletes affected by HCM at screening before participation in competitive sports prevent sudden death

Corrado et al., New Engl J Med 1998;339:364-9

Trends in Sudden Cardiovascular Death in Young Competitive Athletes After Implementation of a Preparticipation Screening Program

Implementation in Italy of preparticipation screening for sport eligibility, including ECG, resulted in 90% reduction of SD in athletes (20-35 yrs of age) of the Veneto Region in the time interval 1980-2004



Corrado et al JAMA 2006;296:1593-1601

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Sudden Death

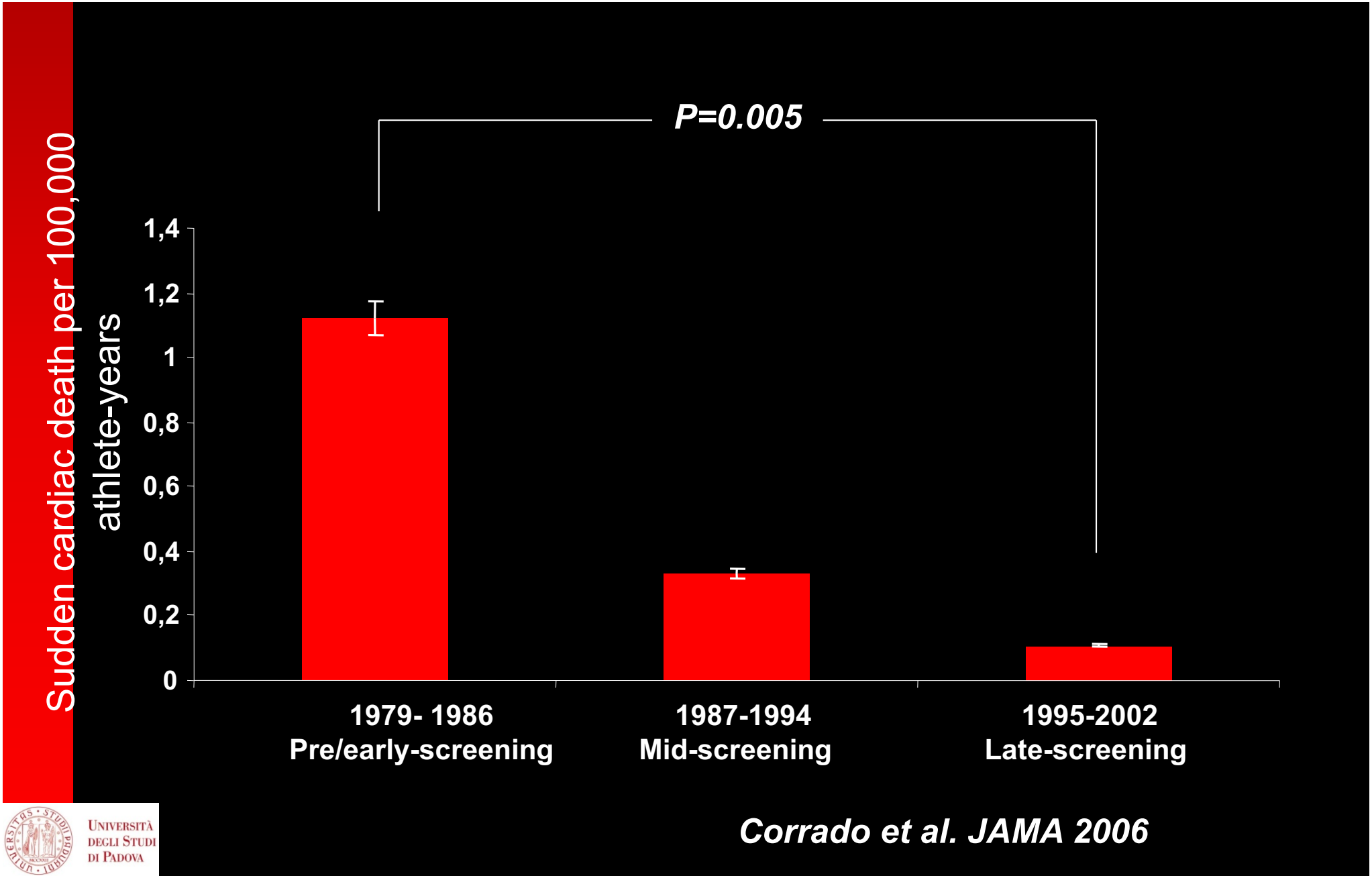
Clinical Profile of Congenital Coronary Artery Anomalies With Origin From the Wrong Aortic Sinus Leading to Sudden Death in Young Competitive Athletes

Cristina Basso, MD, PHD,* Barry J. Maron, MD, FACC,† Domenico Corrado, MD,‡
Gaetano Thiene, MD*
Padua, Italy and Minneapolis, Minnesota

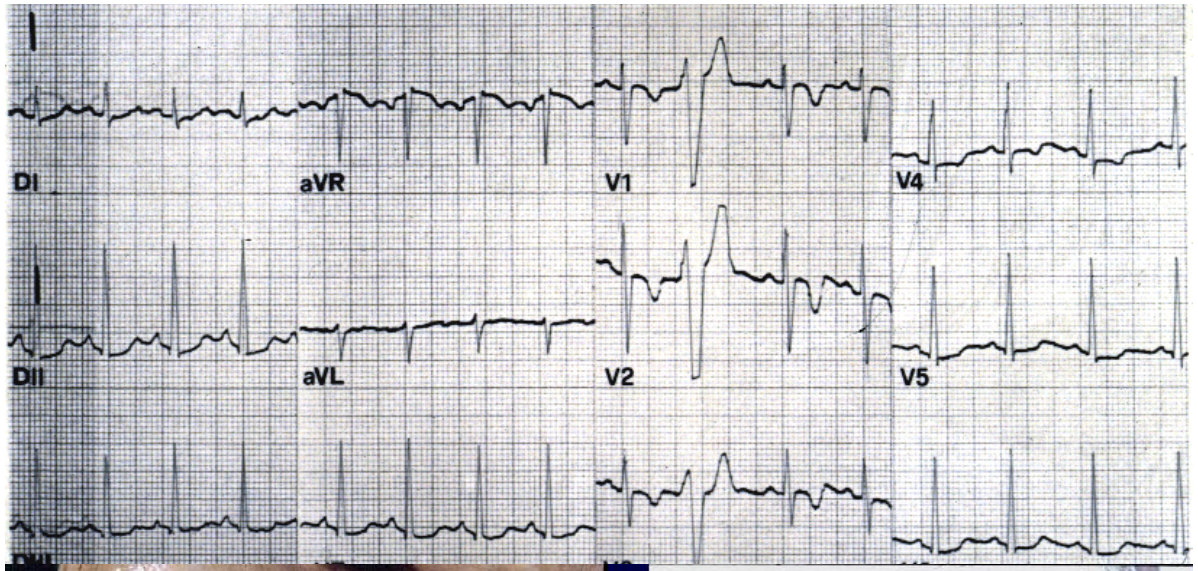
- SD during or shortly after exercise: all
- Premonitory cardiac symptoms: 10 (37%)
  (***syncope, chest pain, palpitations on effort***)
- 12 lead ECG (*available in 9):* normal in all
- Stress test ECG *(available in 6):* normal in all
- Clinical diagnosis and sport disqualification: none

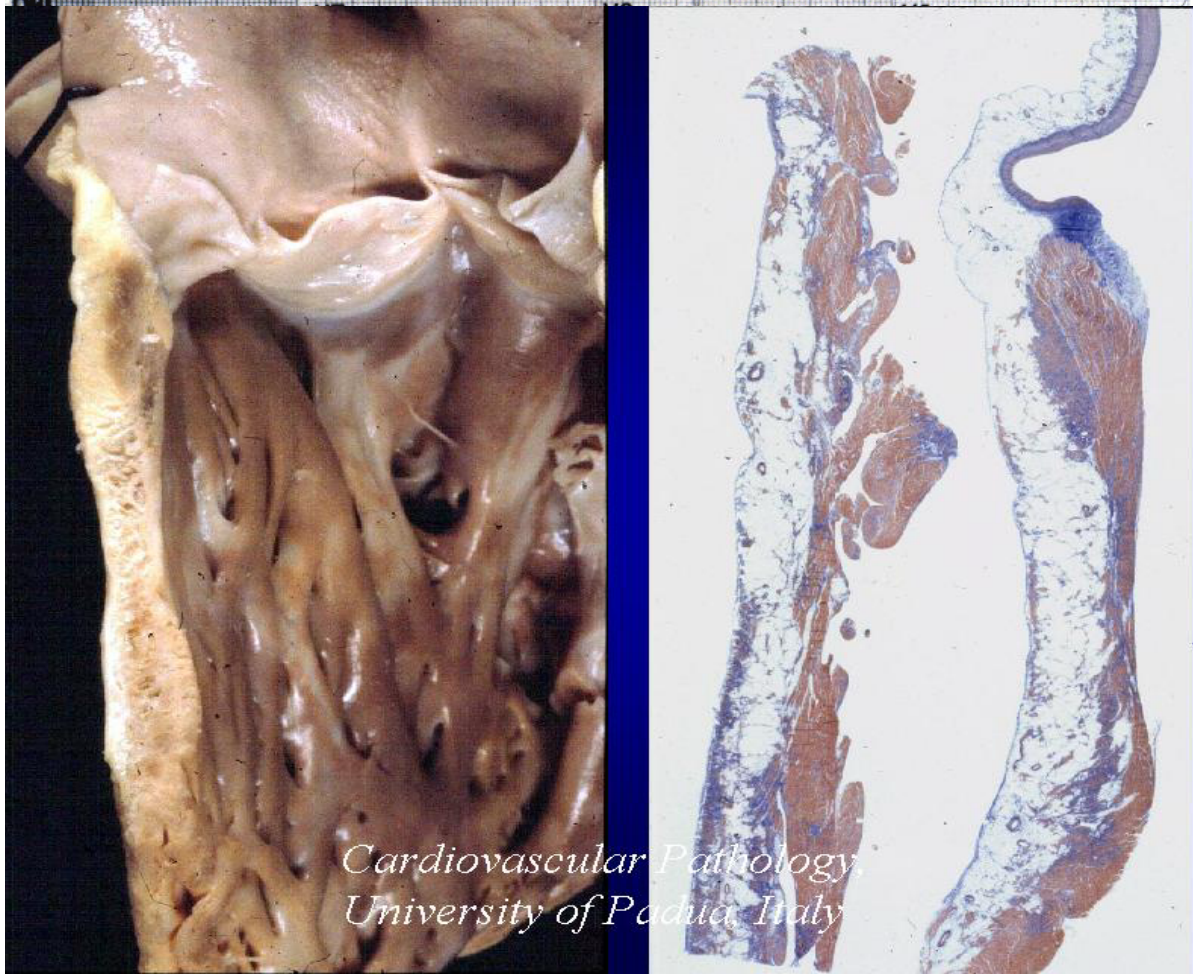
SD IN THE ATHLETES

FROM CARDIOMYOPATHIES



Corrado et al. JAMA 2006

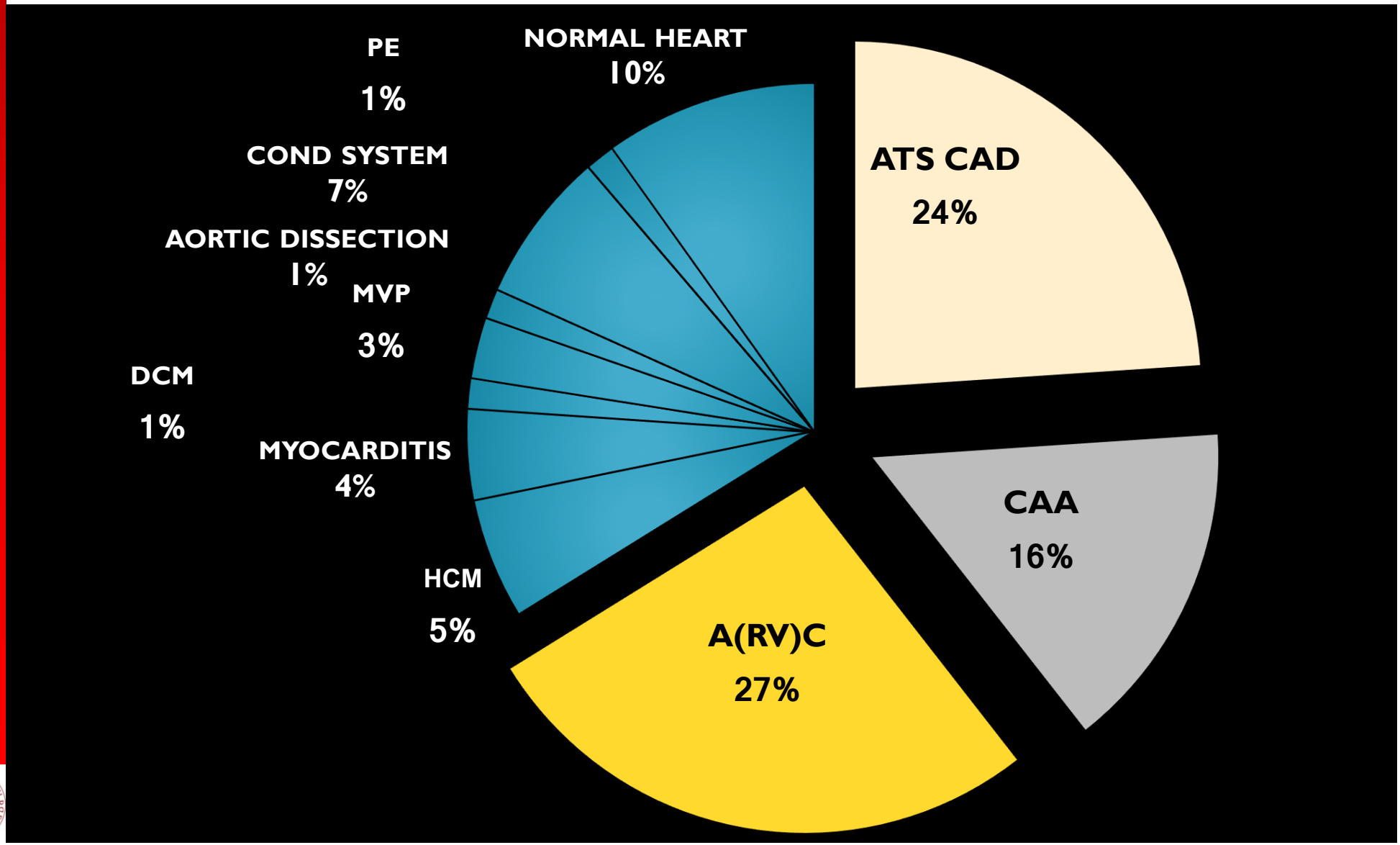

DI
aVR
V1
V4
DII
aVL
V2
V5

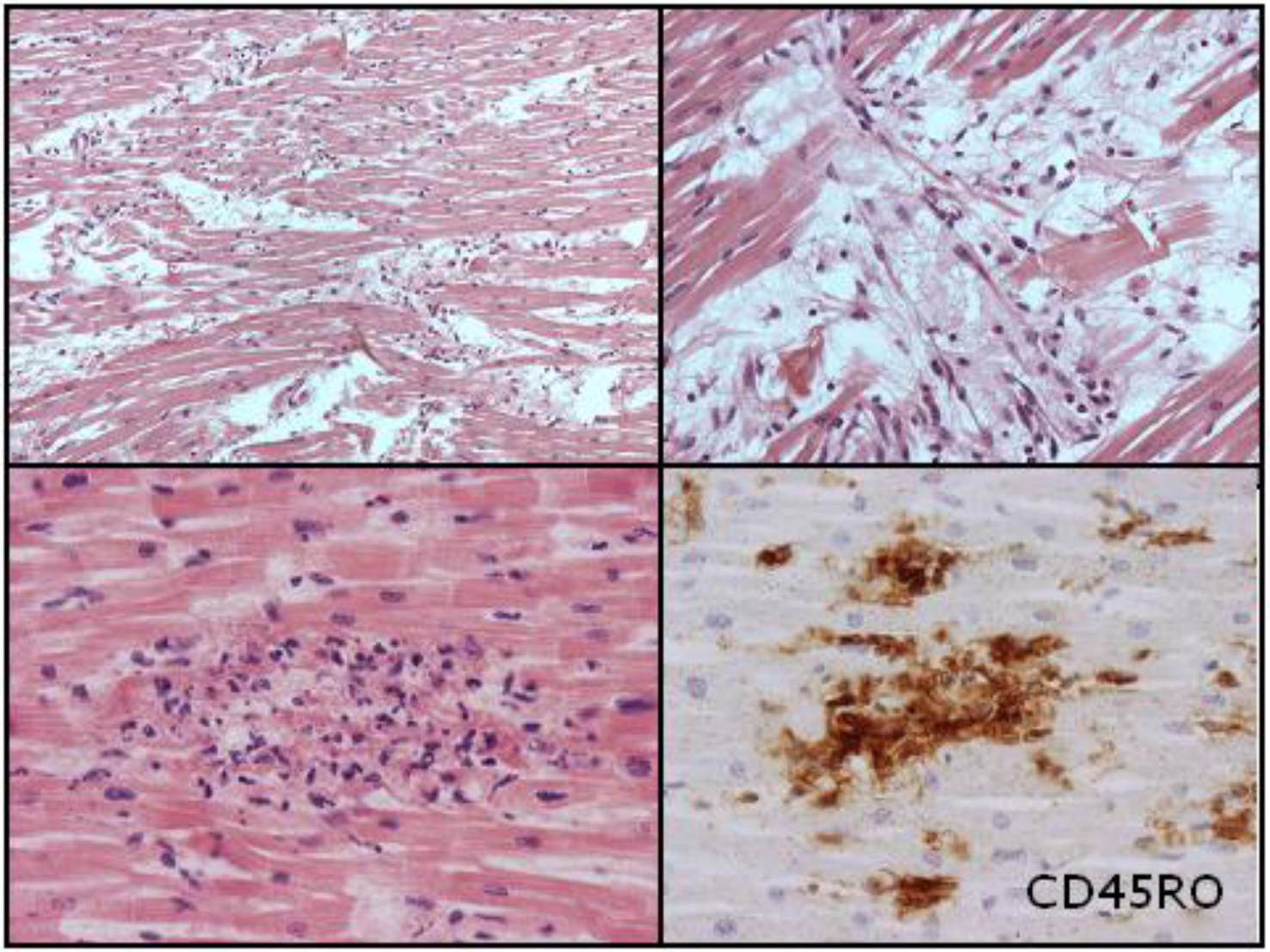

Cardiovascular Pathology
University of Padua, Italy

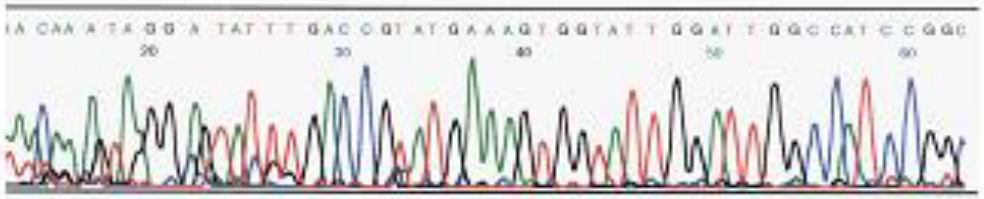
The challenge of early diagnosis and SCD prevention in cardiomyopathies, other than HCM and ARVC…

Sudden death in Athletes

Veneto Region, Italy Total n. 75



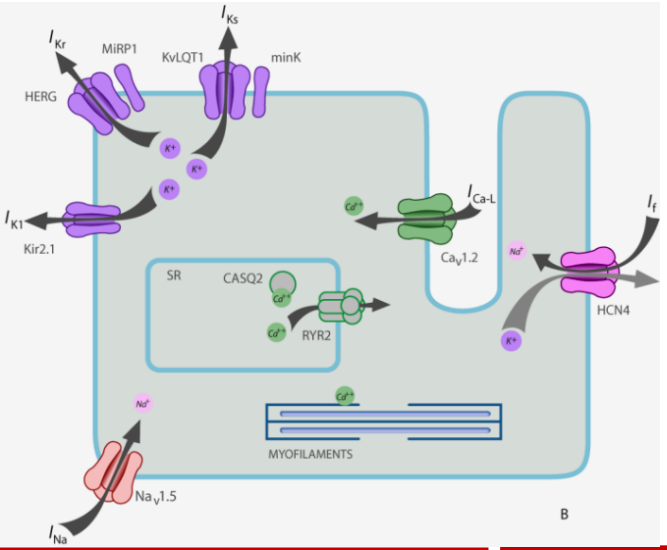

CD45RO

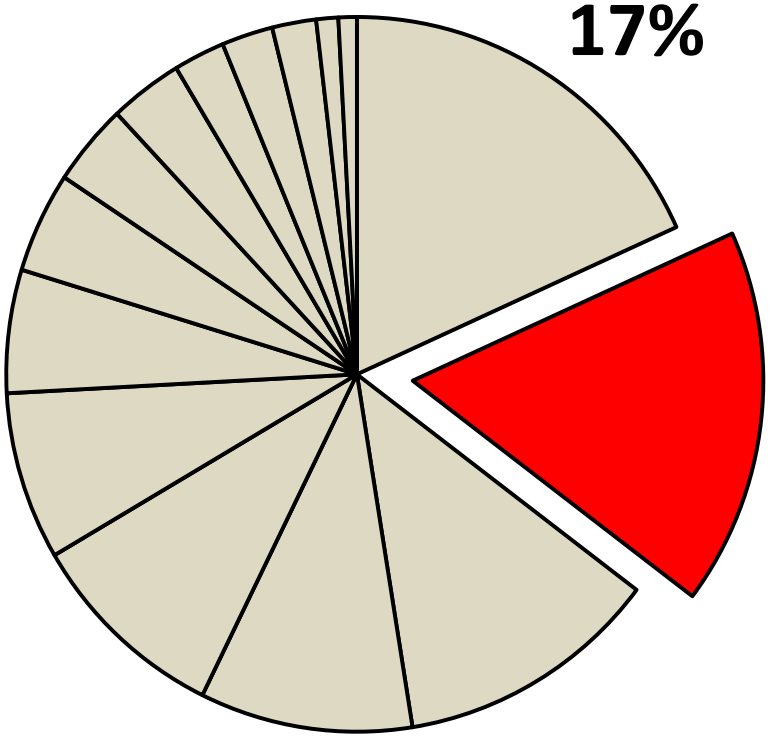


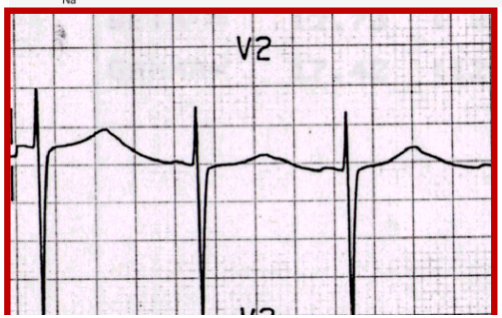

Case O.E.
Marker
Control positive
Control negative
Enterovirus
113 bp

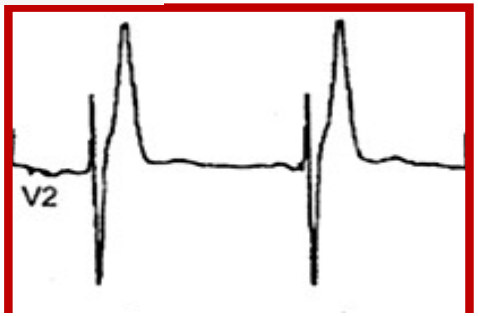
Sudden Cardiac Death and Normal Heart

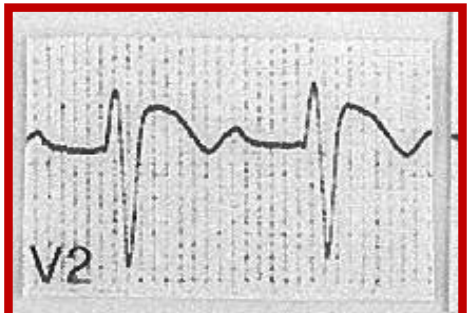
- Long QT
- Short QT
- Brugada syndrome
- Catecholaminergic Polymorphic VT

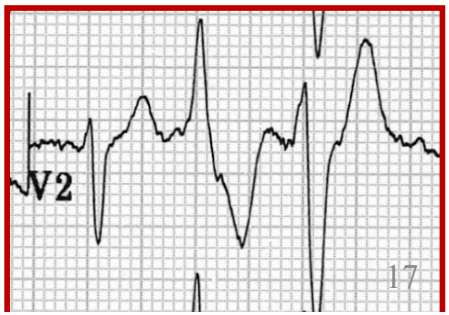












Main Causes of SD in the Young and/or Athletes (autopsy-proven)

Country	N, Age (yrs)	Incidence n/100000/ year	CAD (%)	CAA (%)	Myocardits (%)	HCM (%)	AC (%)	MVP (%)	Normal heart (%)
DN	314 1-35	1.9	13	1	7	0.6	5	2.5	**43**
UK	258 * 7-35	NA	1.4	6	2	7.4	11. 6	NA	**47.6**
Australia /NZ	490 1-35	1.3	24		7	16		NA	**40**
USA	842* 14- 23	NA	4	19	7	36	5	4	**3**
Italy	650 1-40	1	18	5	14	10	10	8	**17**

Virchows Arch
DOI 10.1007/s00428-017-2221-0

ORIGINAL ARTICLE

Guidelines for autopsy investigation of sudden cardiac death: 2017 update from the Association for European Cardiovascular Pathology

Cristina Basso[1] · Beatriz Aguilera[2] · Jytte Banner[3] · Stephan Cohle[4] · Giulia d'Amati[5] · Rosa Henriques de Gouveia[6] · Cira di Gioia[5] · Aurelie Fabre[7] · Patrick J. Gallagher[8] · Ornella Leone[9] · Joaquin Lucena[10] · Lubov Mitrofanova[11] · Pilar Molina[12] · Sarah Parsons[13] · Stefania Rizzo[1] · Mary N. Sheppard[14] · Maria Paz Suárez Mier[2] · S. Kim Suvarna[15] · Gaetano Thiene[1] · Allard van der Wal[16] · Aryan Vink[17] · Katarzyna Michaud[18] · on behalf of the Association for European Cardiovascular Pathology

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Virchows Arch (2008) 452:11–18
DOI 10.1007/s00428-007-0505-5

REVIEW AND PERSPECTIVE

Guidelines for autopsy investigation of sudden cardiac death

Cristina Basso · Margaret Burke · Paul Fornes · Patrick J Gallagher · Rosa Henriques de Gouveia · Mary Sheppard · Gaetano Thiene · Allard van der Wal · on behalf of the Association for European Cardiovascular Pathology*

AECVP
ASSOCIATION FOR EUROPEAN CARDIOVASCULAR PATHOLOGY

Rigorous methodology:

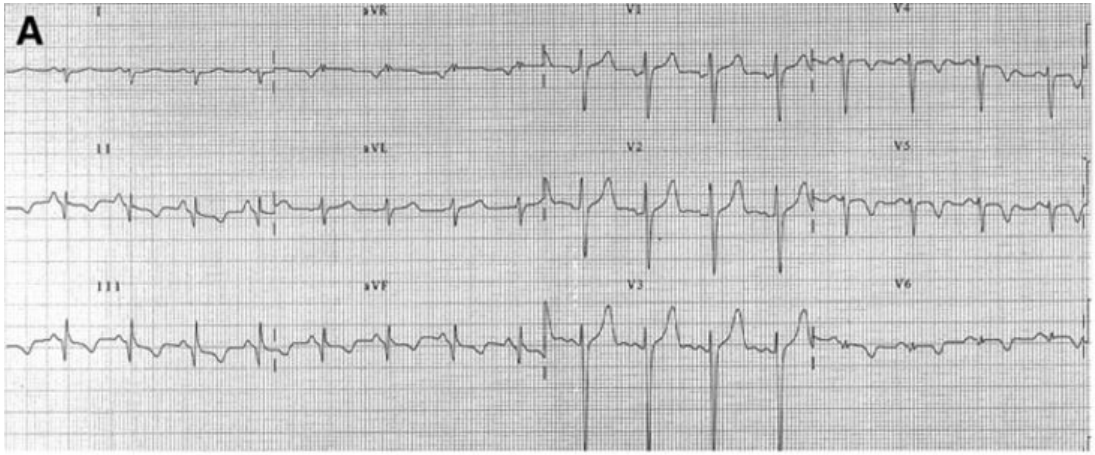
- Gross
- Histology
- Toxicology
- Genetics
- Family investigation

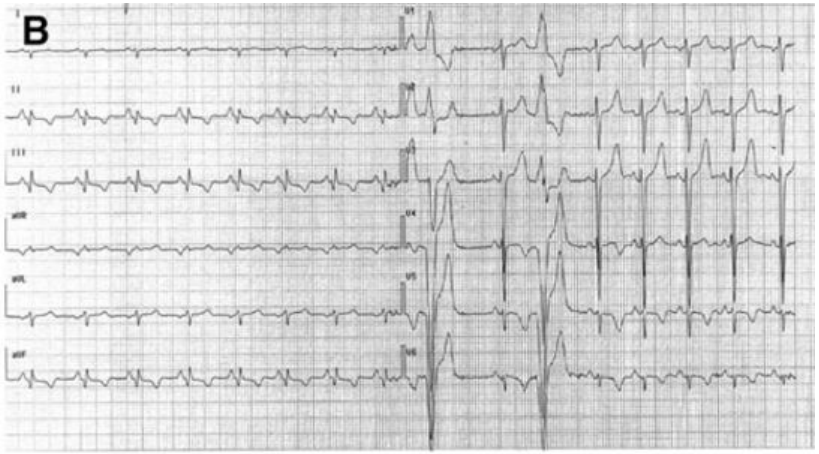
Original Article

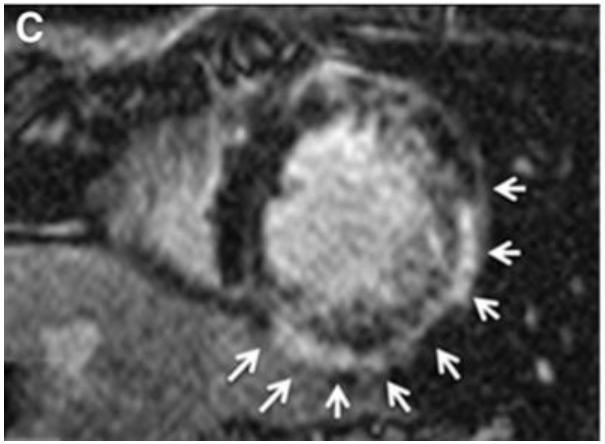
OPEN

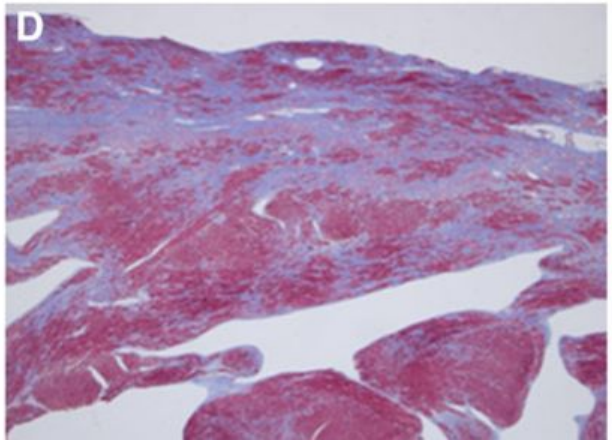
Nonischemic Left Ventricular Scar as a Substrate of Life-Threatening Ventricular Arrhythmias and Sudden Cardiac Death in Competitive Athletes

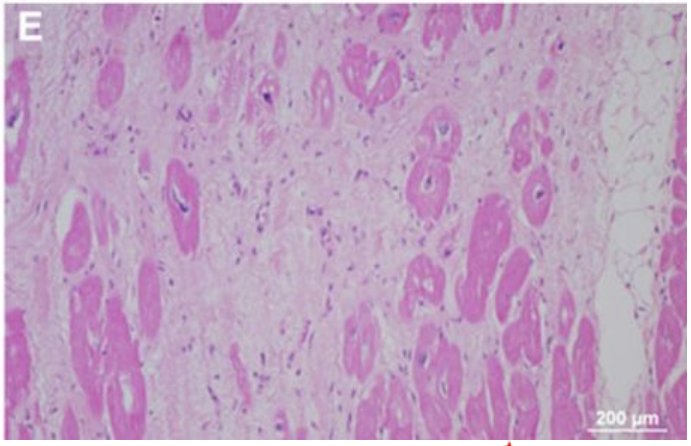
Alessandro Zorzi, MD*; Martina Perazzolo Marra, MD, PhD*; Ilaria Rigato, MD, PhD; Manuel De Lazzari, MD; Angela Susana, MD; Alice Niero, MD; Kalliopi Pilichou, BS, PhD; Federico Migliore, MD, PhD; Stefania Rizzo, MD, PhD; Benedetta Giorgi, MD; Giorgio De Conti, MD; Patrizio Sarto, MD; Luis Serratosa, MD; Giampiero Patrizi, MD; Elia De Maria, MD; Antonio Pelliccia, MD; Cristina Basso, MD, PhD; Maurizio Schiavon, MD; Barbara Bauce, MD, PhD; Sabino Iliceto, MD; Gaetano Thiene, MD; Domenico Corrado, MD, PhD



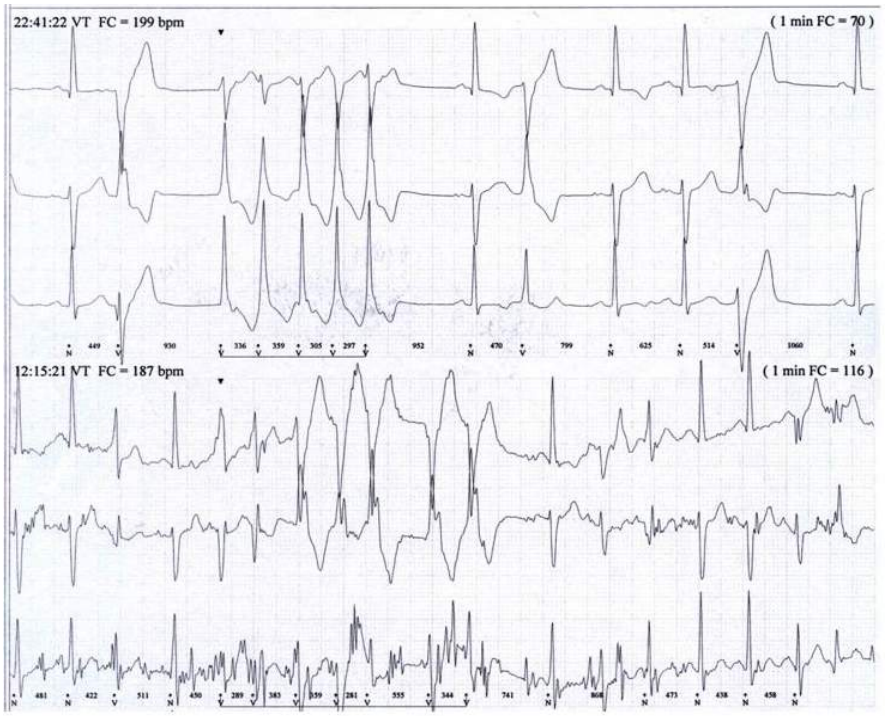


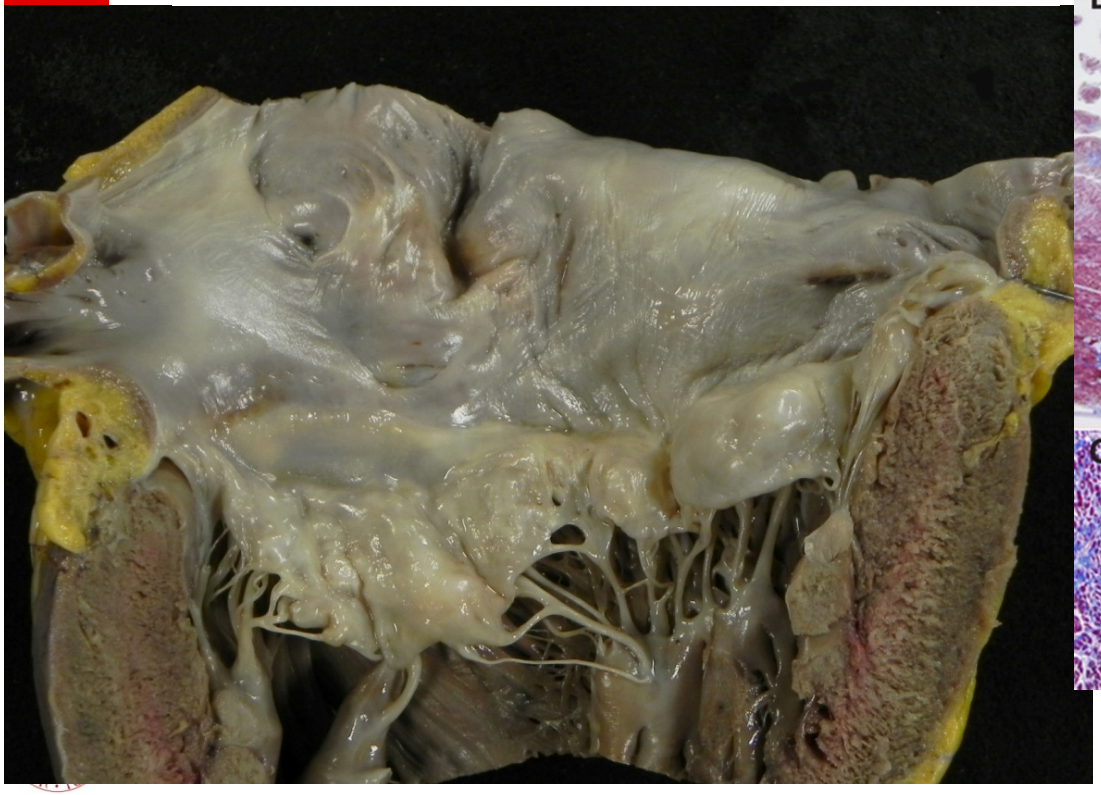


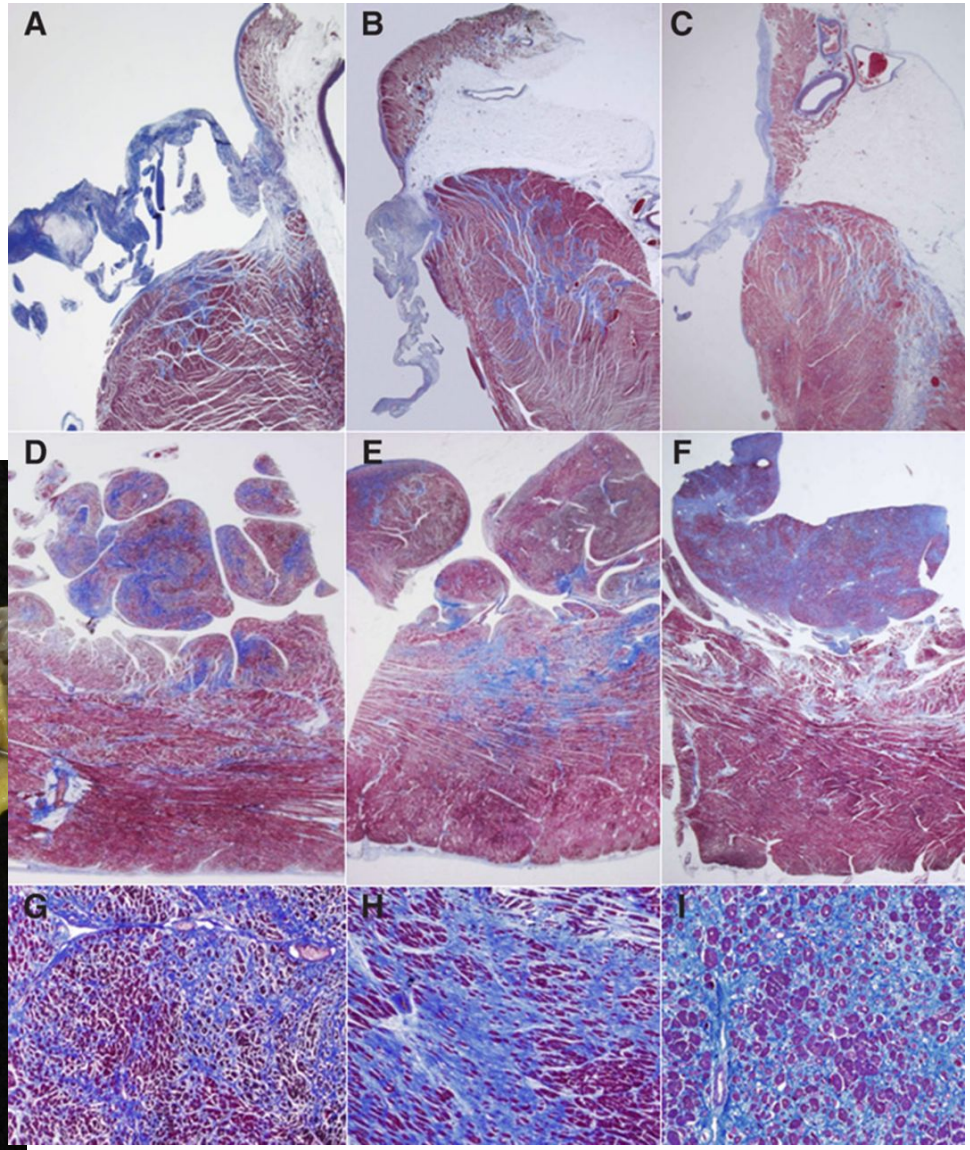




(*Circ Arrhythm Electrophysiol.* 2016;9:e004229. DOI: 10.1161/CIRCEP.116.004229.

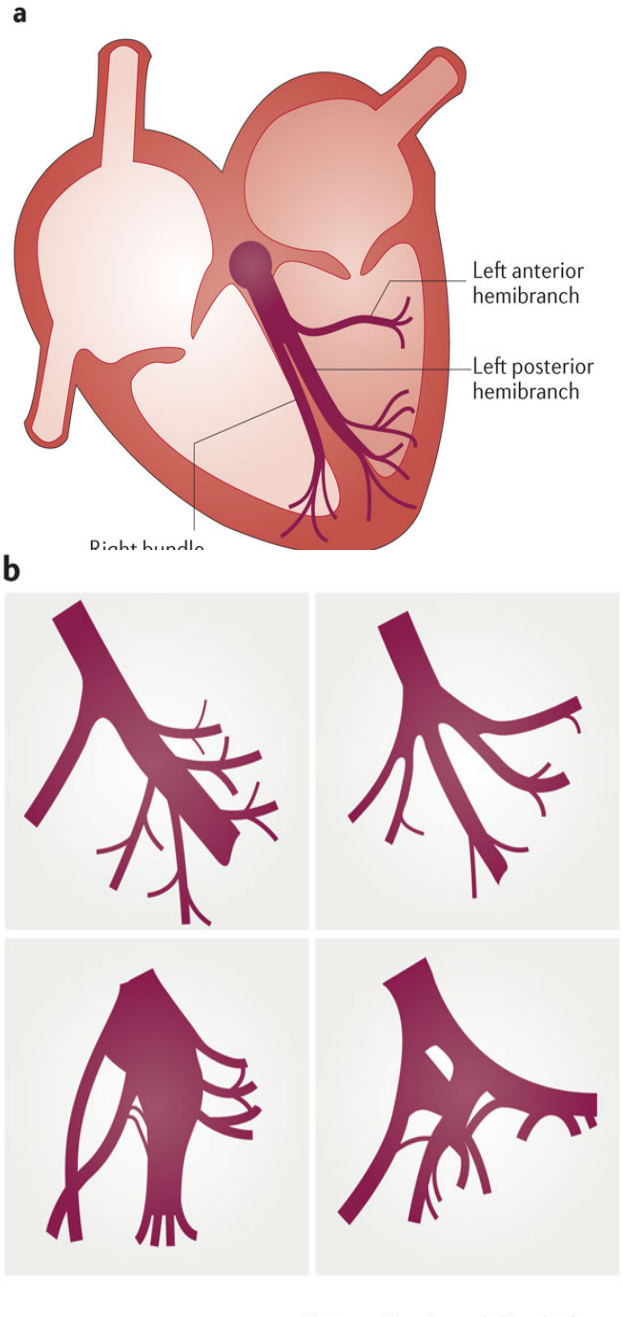


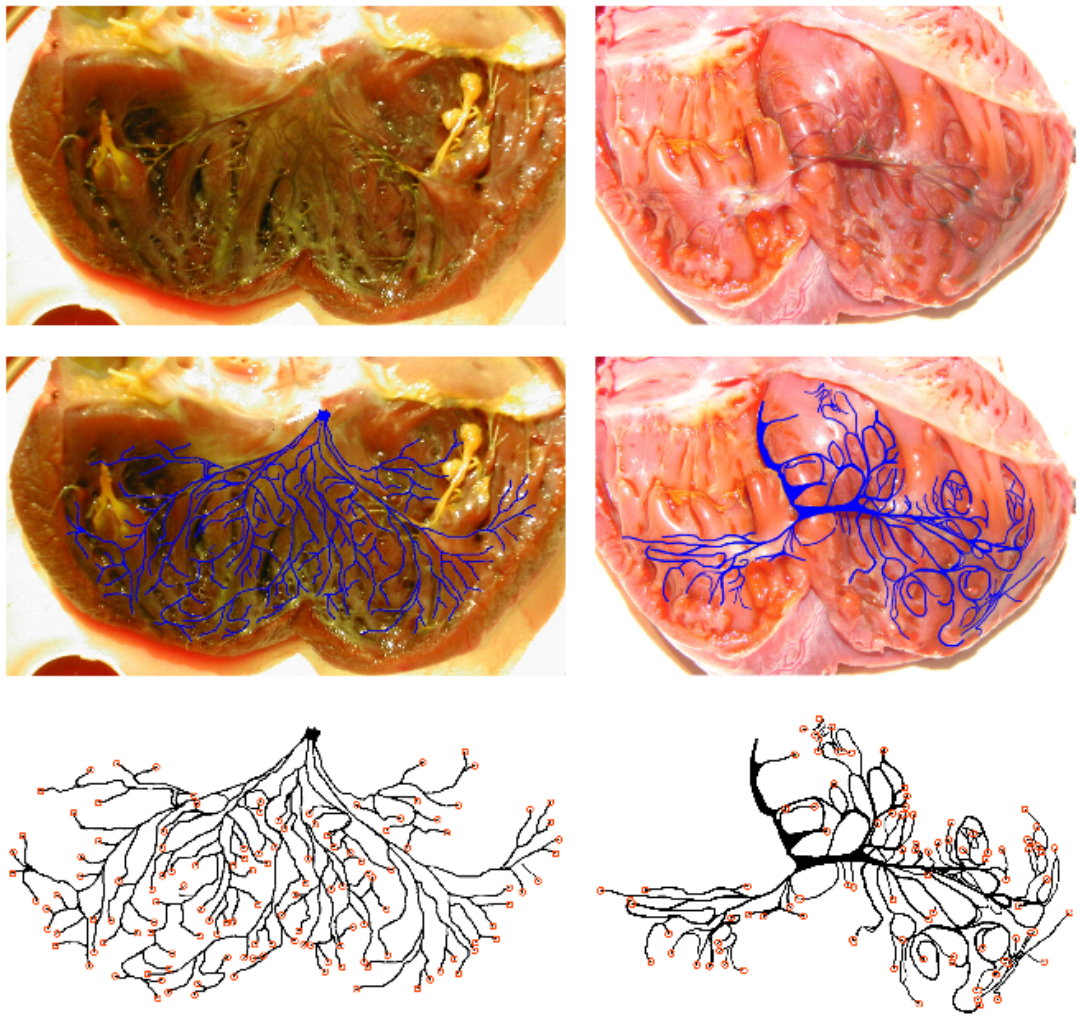




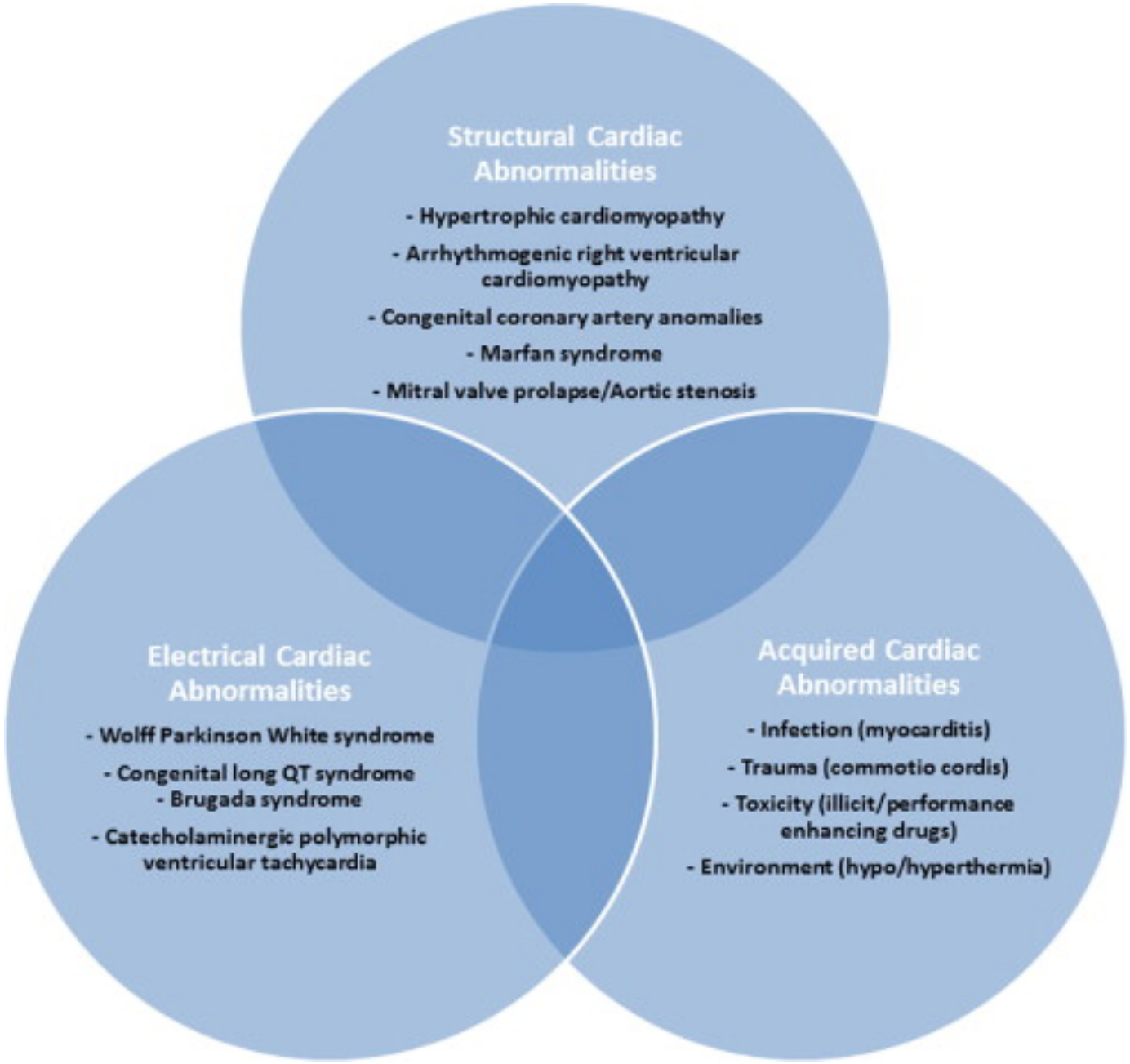
Basso C, et al. Circulation. 2015;132:556-566

Ventricular arrhythmias and the His–Purkinje system





Haissaguerre M. et al. Nat. Rev. Cardiol., Volume 13, 2016, 155-166



J Am Coll Cardiol 2013;61:1027–40

Conclusions

- An age-related distribution of structural substrates of SCD is found at autopsy
- In people >30 yrs, ath-CAD is by far the most common cause accounting for >1/3 SCDs
- Cardiovascular diseases at risk are mostly structural
- CAD, ARVC, HCM are the most frequent causes of cardiac arrest on effort
- SD is possible by combining early diagnosis and early defibrillation (AED)

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journal homepage: www.elsevier.com/locate/ijcard

Correspondence

Sudden cardiac death in an Italian competitive athlete: Pre-participation screening and cardiovascular emergency care are both essential

Giulia d'Amati [a], Raffaele De Caterina [b], Cristina Basso [c,*]

www.gazzetta.it | martedì 17 aprile 2012 | 1.20 € | anno 116 - numero 91

La Gazzetta dello Sport

Tutto il rosa della vita

ORIGINALS

DESERTBOOT

info@asak.it - clarks.it

LA TRAGEDIA MOBILITAZIONE GENERALE PER IL GIOCATORE MORTO SABATO A PESCARA

MOROSINI C'E' UN'IPOTESI DIFETTO GENETICO AL CUORE

L'autopsia ha escluso che Piermario sia stato colpito da infarto o aneurisma celebrale e il pm D'Agostino apre un fascicolo per omicidio colposo. Oggi alle 14 la salma allo stadio del Livorno, giovedì i funerali. Bergamo gli intitola la curva Sud

IL NUOVO CALENDARIO

Nel weekend 34° turno Il 33° il 24 e 25 aprile