



# **Circumstances of sudden death in hypertrophic cardiomyopathy. Data from a large pathology registry.**

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**No Disclosures**

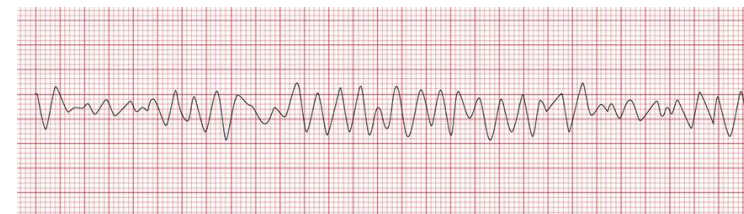
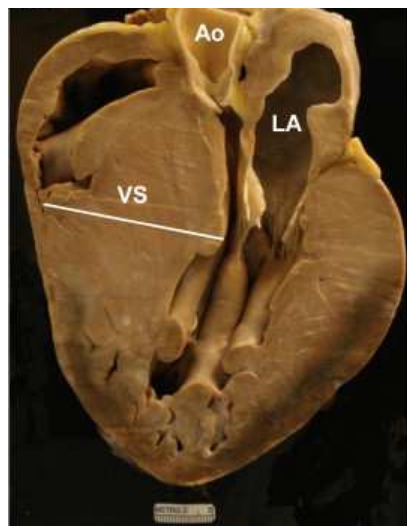


# Declaration of Interest

- I have nothing to declare



# Background: Sudden death in HCM



### HCM Risk-SCD Calculator

Age at evaluation:  Years

Transthoracic Echocardiographic measurement

Maximum LV wall thickness:  mm

Left atrial size:  mm

Max LVOT gradient:  mmHg

Left atrial diameter determined by M-Mode or 2D echocardiography in the parasternal long axis plane at time of evaluation

The maximum LV outflow gradient determined at rest and with Valsalva provocation (irrespective of concurrent medical treatment) using pulsed and continuous wave Doppler from the apical three and five chamber views. Peak outflow tract gradients should be determined using the modified Bernoulli equation:  $\text{Gradient} = 4V^2$ , where V is the peak aortic outflow velocity

Family History of SCD: ☐ No ☐ Yes

History of sudden cardiac death in 1 or more first degree relatives under 40 years of age or SCD in a first degree relative with confirmed HCM at any age (post or ante-mortem diagnosis).

Non-sustained VT: ☐ No ☐ Yes

3 consecutive ventricular beats at a rate of 120 beats per minute and <30s in duration on Holter monitoring (minimum duration 24 hours) at or prior to evaluation.

Unexplained syncope: ☐ No ☐ Yes

History of unexplained syncope at or prior to evaluation.

Risk of SCD at 5 years (%):

ESC recommendation:

EUROPEAN SOCIETY OF CARDIOLOGY

Elliott et al, Europ Heart Journal, 2014

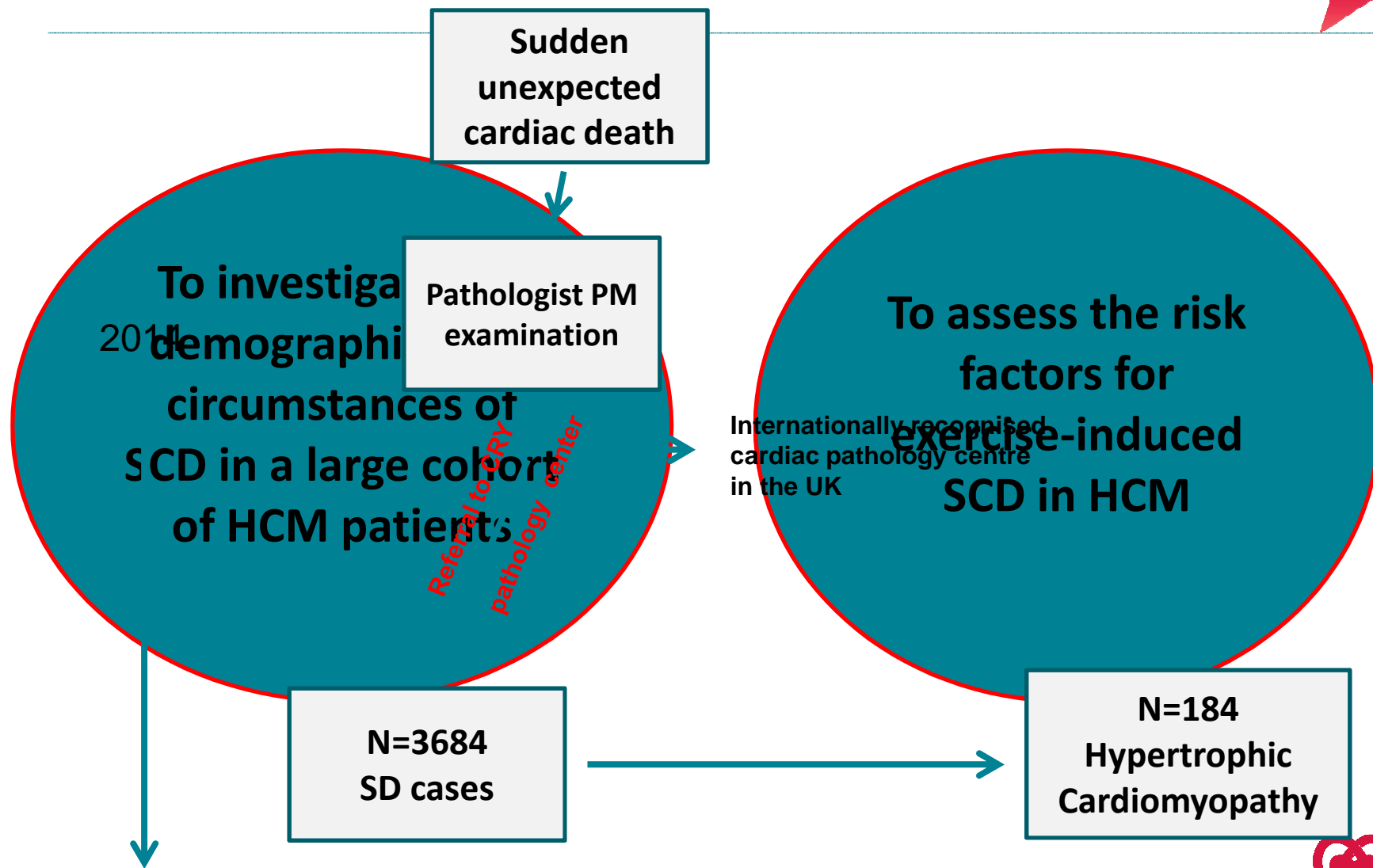
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WE  
ARE THE  
ESC

**Nothing to declare**

## Purpose and key points about methods



## Predictors of exercise induced SCD

	Univariate		Multivariate	
	HR (95% CI)	P	HR (95% CI)	P
Age	0.94 (0.92 to 0.97)	<0.001	0.94 (0.92 to 0.97)	<0.001
Male gender	3.72 (1.24 to 11.38)	0.02	3.47 (1.04 to 10.19)	0.03
History of HCM	0.44 (1.14 to 1.34)	0.15		
Heart weight	1.01 (0.99 to 1.02)	0.78		
LV fibrosis	1.38 (0.64 to 2.98)	0.41		
IVS wall thickness	1.02 (0.94 to 1.11)	0.57		
Symptoms	1.55 (0.59 to 4.11)	0.37		

## Conclusions

**Sudden death in hypertrophic cardiomyopathy occurs frequently in patients where diagnosis is not made during life and frequently occurs in asymptomatic patients**

**Sudden death is rarely associated with exercise and young males constitute the category at higher risk of exercise-induced sudden death**

**Future prospective randomised studies should assess the benefits and harms/risks of exercise in patients with HCM**

**Early identification of patients with HCM is key to properly stratify the risk of sudden death**