

DISTRIBUTION OF PREDICTOR VARIABLES OF SUDDEN CARDIAC DEATH IN HYPERTROPHIC CARDIOMYOPATHY. INSIGHTS INTO NEW HCM RISK-SCD MODEL

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Background

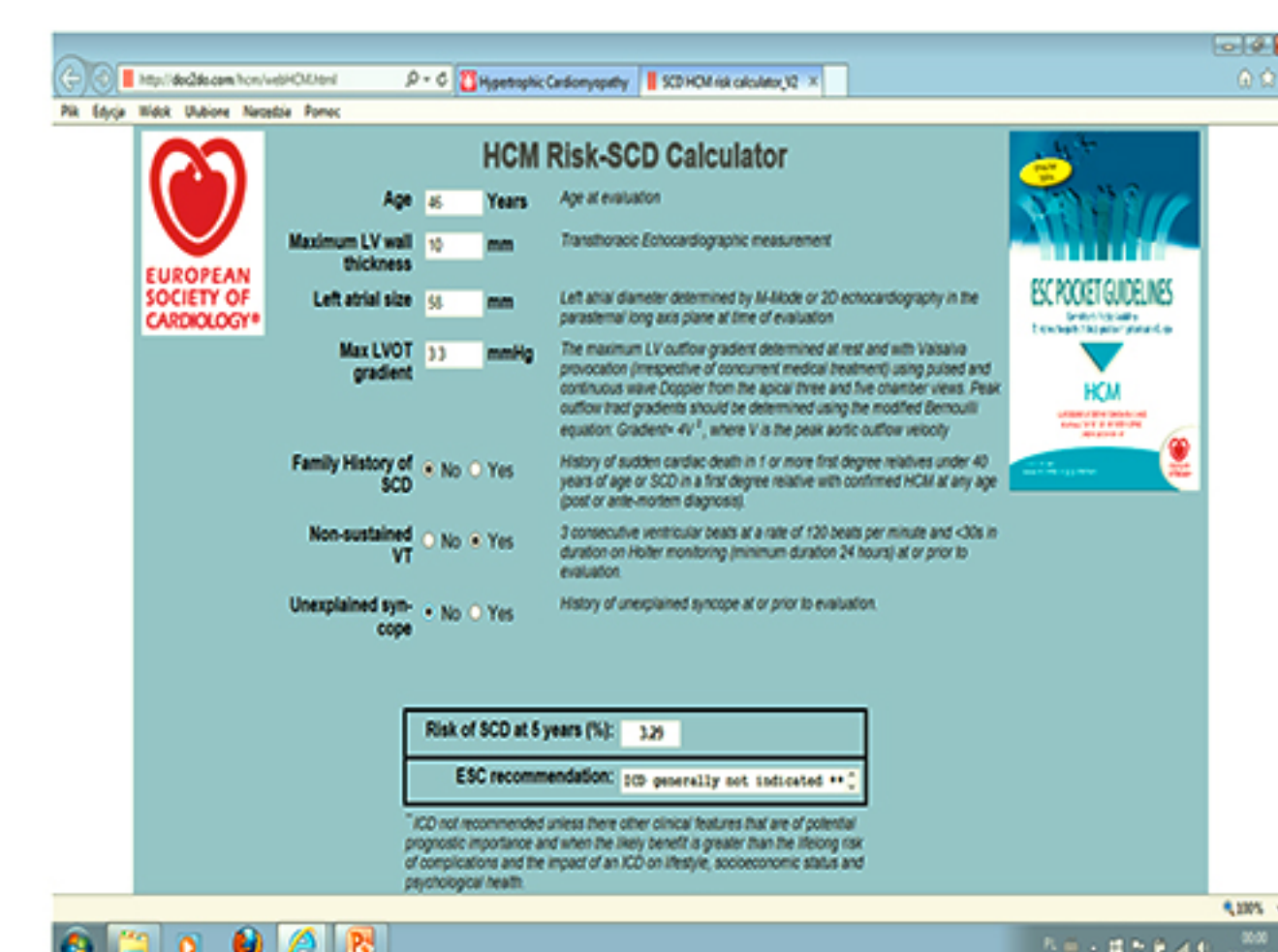
Hypertrophic cardiomyopathy (HCM) is associated with the risk of sudden cardiac death (SCD).

Aim

To analyze the distribution of parameters used in the calculator between low, intermediate, and high risk.

Methods

New European Society of Cardiology (ESC) guidelines on HCM from 2014 introduced the novel risk model, namely HCM Risk-SCD, that estimates the 5-year probability of SCD. The model takes into account 7 following predictor variables: 4 parametric – age, maximal left ventricular wall thickness, left atrial (LA) diameter, and maximal left ventricular outflow tract (LVOT) gradient, and 3 categorical variables: family history of SCD, history of non-sustained ventricular tachycardia (nsVT), and unexplained syncope.



Results

Parameter	value
age [years]	54 ± 13.7
male sex [n, %]	56, 63%
NYHA class I-II [n, %]	61, 68%
atrial fibrillation [n, %]	14, 15%
LV maximal thickness [mm]	20.6 ± 7.5
LV ejection fraction [%]	59 ± 19
LV outflow tract gradient [mmHg]	41.3 ± 47.8
B-blocker [n, %]	74, 83%

Scores	low risk	intermediate risk	high risk
Number of patients	75 (83%)	10 (11%)	5 (6%)
	↓ ICD not indicated	↓ ICD may be considered	↓ ICD should be considered

Parameter	low SCD risk (n=75)	intermediate SCD risk (n=10)	high SCD risk (n=5)	p-value
age [years]	55.5 ± 12.2	45.9 ± 16.9	39.8 ± 18.3	0.006
maximal wall thickness [mm]	19.6 ± 4.7	22.3 ± 10	22 ± 6.3	0.7
left atrium diameter [mm]	43.0 ± 9.7	46.2 ± 11	45.6 ± 12.4	0.7
maximal LVOT gradient [mmHg]	34.6 ± 43.2	59.3 ± 69	92.6 ± 54.9	0.04
family history of SCD	6 (8%)	2 (20%)	1 (20%)	0.4
non-sustained ventricular tachycardia	6 (8%)	4 (40%)	3 (60%)	<0.001
syncope	5 (6.7%)	4 (40%)	2 (40%)	0.001

Conclusions

- Only 15 (17%) out of 90 HCM patients have non-negligible risk of SCD, estimated by HCM Risk-SCD, and only in them implantation of implantable cardioverter-defibrillator (ICD) may or should be considered.
- The strongest parameters influencing risk assessment in our group were: age, history of nsVT, syncope and LVOT gradient, whereas wall thickness, LA diameter and family history of SCD did not have significant impact on SCD risk assessment.