Supplementary material

Havel M, Koranda P, Kincl V, et al. Additional value of the coronary artery calcium score in patients for whom myocardial perfusion imaging is challenging. Kardiol Pol. 2019; 77: 458-464. doi:10.5603/KP.a2019.0037

Supplementary Table S1. Baseline clinical characteristics of patients with and without cardiac events.

	Global **n = 195**	**Cardiac events** **n = 58**	**No cardiac event** **n = 137**	**P value**	**OR**	**OR 95% CI**
Age	62.2 ± 10.9	65.2 ± 10.4	60.9 ± 10.9	0.062		
Male sex	139 (71.3%)	46 (79.3%)	93 (67.9%)	0.121	0.55	0.27-1.14
Diabetes mellitus	94 (48.2%)	34 (58.6%)	60 (43.8%)	0.062	1.82	0.98-1.91
SDS	0.0 (3.0)	4.0 (IQR 7.0)	0.0 (IQR 1.0)	<0.001*		
Percentage of ischemic myocardium	0.0 (4.4)	5.9 (10.3)	0.0 (IQR 1.5)	<0.001*		
Stress LVEF (%)	52.9 ± 13.3	50.7 ± 12.7	53.8 ± 13.5	0.138		
Resting LVEF (%)	51.1 ± 13.2	50.2 ± 14.0	51.5 ± 12.9	0.543		
Ischemia (overall)	44 (22.6%)	29 (50.0%)	15 (10.9%)	<0.001*	8.13	3.87-17.10
Abnormal functional parameters	91 (46.7%)	34 (58.6%)	57 (41.6%)	0.041*	1.99	1.07-3.71
CACS	406.0 (IQR 1169.0)	1166.0 (IQR 1669.0)	152.0 (IQR 613.1)	<0.001*		
$\log_2$(CACS + 1)	8.7 (IQR 4.1)	10.3 (IQR 1.9)	7.6 (IQR 4.8)	<0.001*		

CACS ≥ 530	88 (45.1%)	45 (77.6%)	43 (31.4%)	<0.000*	7.57	3.70-15.46

Values given are the mean ± SD, median and IQR, or counts and percentage. OR - odds ratio, OR 95% CI - odds ratio 95% confidence interval, SDS - summed difference score, LVEF - left ventricular ejection fraction, CACS - coronary artery calcium score, * - significant P value.

Supplementary Table S2. Stratification of ischemia severity in the study group.

	Global **n = 195**	**Cardiac events** **n = 58**	**No cardiac event** **n = 137**	**P value**
No ischemia	151 (77.4%)	29 (50.0%)	122 (89.1%)	<0.001*
Mild ischemia	26 (13.3%)	18 (31.0%)	8 (5.8%)	
Severe ischemia	18 (9.2%)	11 (19.0%)	7 (5.1%)	

Proportions are significantly different between the cardiac event and no cardiac event groups.

Supplementary Table S3. Unadjusted hazard ratios (HRs) with 95% CIs.

	P value	**HR**	**HR 95% CI**
Age	0.009*	1.03	1.01 - 1.06
Male sex	0.053	1.87	0.99 – 3.54
Diabetes mellitus	0.103	1.55	0.92 – 2.61
Ischemia (overall)	<0.001*	5.11	3.04 – 8.57
Mild ischemia	<0.001*	4.99	2.77 – 9.01
Severe ischemia	<0.001*	5.31	2.63 – 10.72
Abnormal functional parameters	0.011*	1.97	1.17 – 3.33
CACS ≥ 530	<0.001*	5.16	2.78 – 9.58
$\log_2$(CACS + 1)	<0.001*	1.41	1.24 – 1.62

CACS - coronary artery calcium score, * - significant P value

Supplementary Table S4. Hazard ratios (HRs) with 95% CIs from multivariable Cox proportional hazards regression models (considering age, gender, history of diabetes mellitus, severity of ischemia, functional abnormalities) from a) models without the coronary artery calcium score (CACS), b) models with the stratified variable CACS ≥ 530, and c) models with CACS as a continuous variable [$\log_2$(CACS + 1)].

a)	**P value**	**HR**	**HR 95% CI**
Age	0.002*	1.04	1.01 – 1.06
Male sex	0.336	1.41	0.70 – 2.83
Diabetes mellitus	0.765	1.09	0.63 – 1.89
Mild ischemia	<0.001*	4.32	2.34 – 8.00
Severe ischemia	<0.001*	6.00	2.92 – 12.34
Abnormal functional parameters	0.014*	2.00	1.15 – 3.48

b)	P value	HR	HR 95% CI
Age	0.021*	1.03	1.00 – 1.05
Male sex	0.400	1.36	0.67 – 2.78
Diabetes mellitus	0.847	0.95	0.54 – 1.66
Mild ischemia	<0.001*	3.60	1.91 – 6.77
Severe ischemia	<0.001*	6.85	3.31 – 14.18
Abnormal functional parameters	0.030*	1.89	1.07 – 3.36
CACS ≥ 530	<0.001*	4.60	2.42 – 8.73

c)	P value	HR	HR 95% CI
Age	0.088	1.02	1.00 – 1.04
Male sex	0.406	1.34	0.67 – 2.69
Diabetes mellitus	0.448	0.80	0.45 – 1.42
Mild ischemia	<0.001*	3.90	2.06 – 7.39

Severe ischemia	<0.001*	7.45	3.49 – 15.93
Abnormal functional parameters	0.005*	2.24	1.27 – 3.95
log_2(CACS + 1)	<0.001*	1.49	1.27 – 1.75

For c) 1 unit of log_2(CACS + 1) represents doubling of CACS; * - significant P value

Supplementary Table S5. Subset of patients without detected ischemia on MPI-SPECT.

No ischemia **n = 151**	**Cardiac events** **n = 29**	**No cardiac event** **n= 122**	**P value**	**OR**	**OR 95% CI**
CACS ≥ 530	26 (89.7%)	38 (31.1%)	<0.001*	19.16	5.46-67.20
CACS < 530	3 (10.3%)	84 (68.9%)			
CACS	1827.0 (IQR 3356.5)	171.0 (IQR 727.8)	<0.001*		
$\log_2$(CACS + 1)	10.8 (IQR 2.4)	7.4 (IQR 4.9)			
Abnormal functional parameters	13 (44.8%)	52 (42.6%)	0.84	1.09	0.48-2.77

OR - odds ratio, OR 95% CI - odds ratio 95% confidence interval, CACS - coronary artery calcium score, * - significant P value