

Supplementary material

Ladziński S, Niedziela J, Witkowski A. The influence of severe mitral regurgitation on major adverse cardiac and cerebrovascular events after myocardial infarction in 1-year follow-up: Data from PL-ACS registry. Kardiol Pol. 2023.

Please note that the journal is not responsible for the scientific accuracy or functionality of any supplementary material submitted by the authors. Any queries (except missing content) should be directed to the corresponding author of the article.

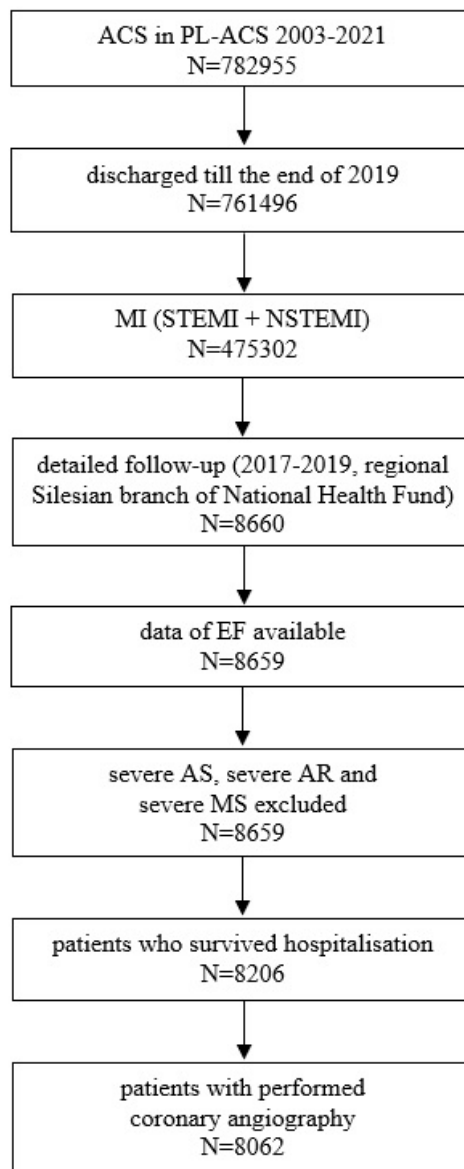


Figure S1. Flowchart

Abbreviations: ACS, acute coronary syndrome; AR, aortic regurgitation; AS, aortic stenosis; EF, ejection fraction; MS, mitral stenosis; NSTEMI, non-ST-elevation myocardial infarction; PL-ACS, Polish Registry of Acute Coronary Syndromes; STEMI, ST-elevation myocardial infarction

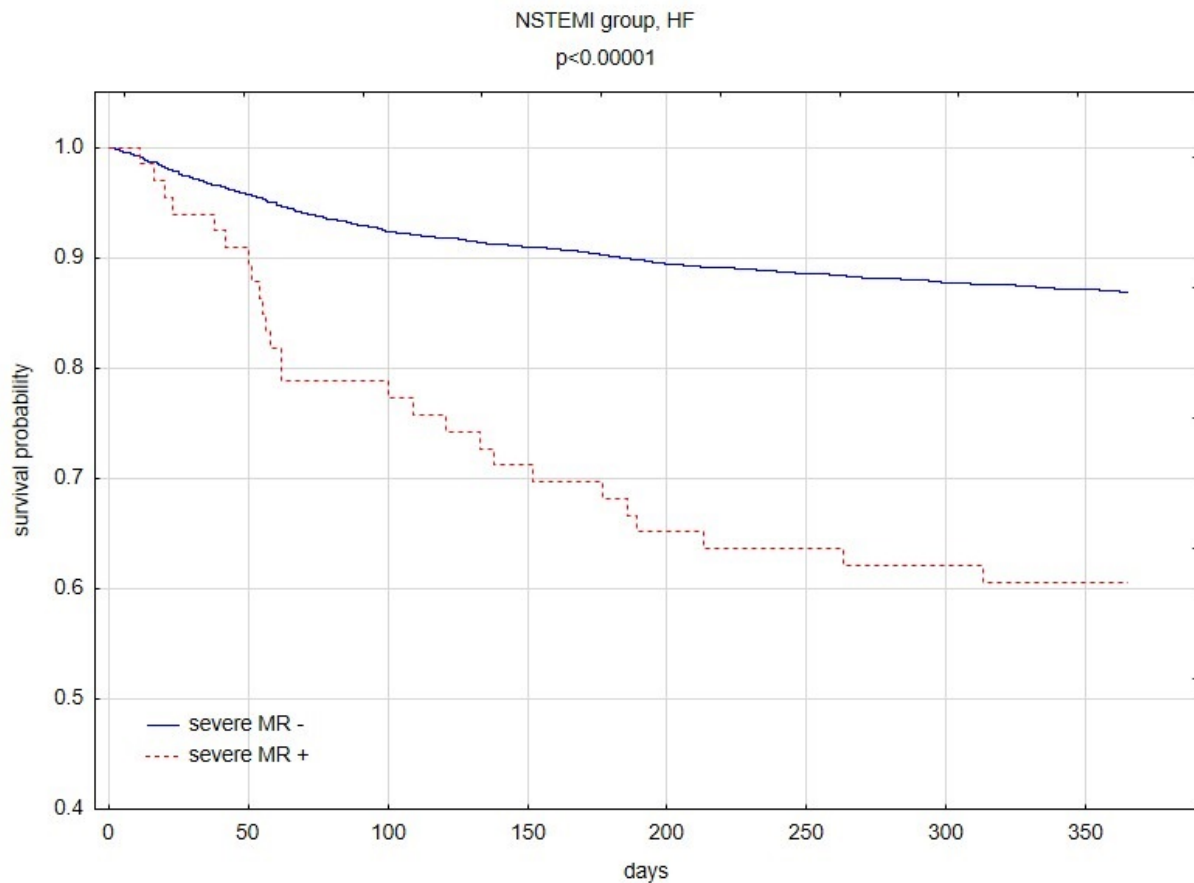


Figure S2. Kaplan-Meier estimator — NSTEMI group, rehospitalization due to HF

Abbreviations: HF, heart failure; MR, mitral regurgitation; NSTEMI, non-ST-elevation myocardial infarction

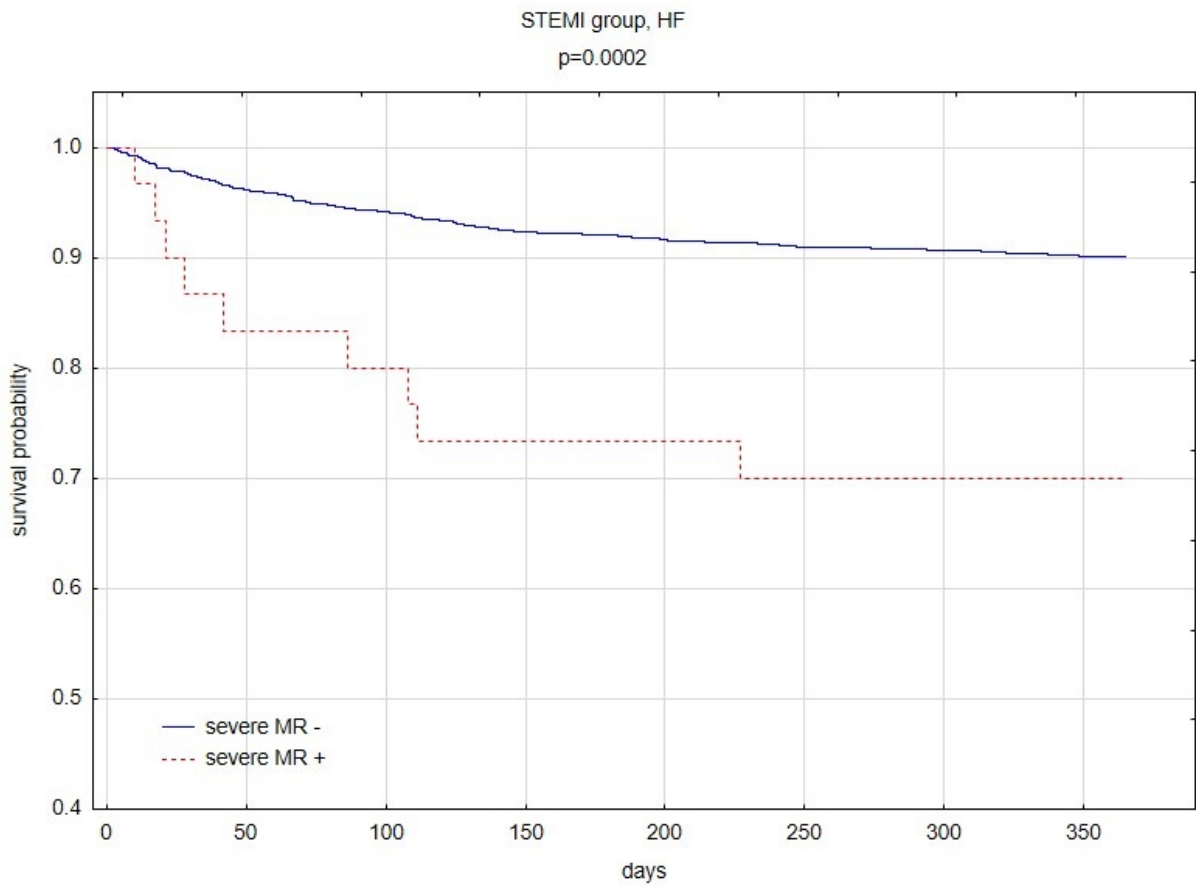


Figure S3. Kaplan-Meier estimator – STEMI group, rehospitalization due to HF

Abbreviations: HF, heart failure; MR, mitral regurgitation; STEMI, ST-elevation myocardial infarction

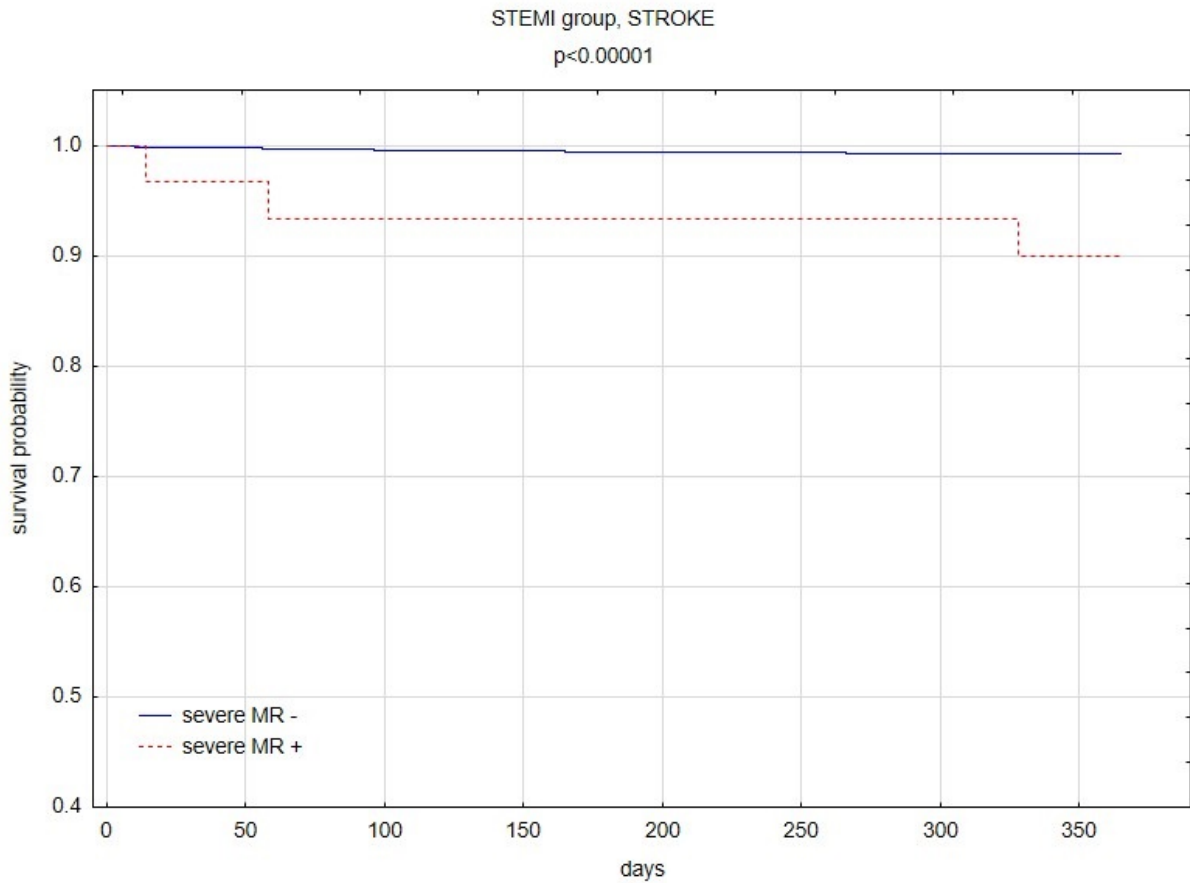


Figure S4. Kaplan-Meier estimator – STEMI group, stroke occurrence

Abbreviations: MR, mitral regurgitation; STEMI, ST-elevation myocardial infarction

Table S1. Clinical characteristics

	NSTEMI N=5561			STEMI N=2501		
	Severe MR + N=66	Severe MR – N=5495	P	Severe MR + N=30	Severe MR – N=2471	P
HR, median (Q1-Q3), /min.	80 (70-100)	75 (67-80)	<0.001	85 (72-120)	78 (69-90)	0.01
SBP, median (Q1-Q3), mm Hg	130 (120-150)	138 (120-150)	0.03	120 (110-140)	130 (120-150)	0.08
DBP, median (Q1-Q3), mm Hg	80 (70-85)	80 (75-90)	0.11	80 (70-85)	80 (70-90)	0.26

EF, median (Q1-Q3), %	35 (24-40)	50 (40-55)	<0.001	38 (30-45)	45 (40-50)	<0.001
LVEDD, median (Q1-Q3), mm	63 (52-69)	50 (46-55)	<0.001	53 (48-58)	50 (46-53)	0.03
LVEDS, median (Q1-Q3), mm	48 (37-55)	35 (30-40)	<0.001	40 (35-41)	35 (30-39)	0.01
SCA before admission, n (%)	1 (1.5)	60 (1.1)	0.99	1 (3.3)	86 (3.5)	0.97
Killip class at admission, n (%)						
1	38 (57.6)	4842 (88.1)	<0.001	21 (70.0)	1051 (83.0)	0.09
2	20 (30.2)	497 (9.0)		5 (16.6)	289 (11.8)	
3	7 (10.6)	115 (2.1)		2 (6.7)	40 (1.6)	
4	1 (1.5)	41 (0.8)		2 (6.7)	390 (3.6)	
NYHA at discharge, n/n (%)						
I	17/65 (26.2)	3639/5488 (66.3)	<0.001	11 (36.7)	1585 (64.3)	0.01
II	39/65 (60.0)	1524/5488 (27.8)		17 (56.6)	733 (29.7)	
III	8/65 (12.3)	297/5488 (5.4)		2 (6.7)	123 (5.0)	
IV	1/65 (1.5)	28/5488 (0.5)		0 (0)	24 (1.0)	

Abbreviations: DBP, diastolic blood pressure; EF, ejection fraction; HR, heart rate; LVEDD, left ventricular end diastolic diameter; LVEDS, left ventricular end systolic diameter; MR, mitral regurgitation; NSTEMI, non-ST-elevation myocardial infarction; NYHA, New York Heart Association Functional Classification; SBP, systolic blood pressure; SCA, sudden cardiac arrest; STEMI, ST-elevation myocardial infarction

Table S2. Concomitant VHD

	NSTEMI N=5561			STEMI N=2501		
	Severe MR + N=66	Severe MR - N=5495	P	Severe MR + N=30	Severe MR - N=2471	P
Moderate MR, n (%)	-	393 (7.2)		-	117 (4.7)	
Severe TR, n (%)	11 (16.7)	10 (0.2)	<0.001	7 (23.3)	8 (0.3)	<0.001
Moderate TR, n (%)	17 (25.8)	159 (2.9)	<0.001	4 (13.3)	51 (2.1)	0.001
Moderate AS, n (%)	2 (3.0)	65 (1.2)	0.60	0 (0)	6 (0.2)	0.10
Moderate AR, n (%)	5 (7.6)	65 (1.2)	<0.001	1 (3.3)	19 (0.8)	0.48
Moderate MS, n (%)	1 (1.5)	21 (0.4)	0.55	0 (0)	6 (0.2)	0.10

Severe AS, severe AR and severe MS were excluded previously

Abbreviations: AR, aortic regurgitation; AS, aortic stenosis; MR, mitral regurgitation; MS, mitral stenosis; NSTEMI, non-ST-elevation myocardial infarction; STEMI, ST-elevation myocardial infarction; TR, tricuspid regurgitation; VHD, valvular heart disease

Table S3. In-hospital management

	NSTEMI N=5561			STEMI N=2501		
	Severe MR + N=66	Severe MR - N=5495	P	Severe MR + N=30	Severe MR - N=2471	P
Radial access, n (%)	64 (66.6)	4117 (74.9)	<0.001	19 (63.3)	1738 (70.3)	0.40

IRA, n (%)						
LM	4 (6.1)	226 (4.1)		0 (0)	46 (1.9)	
LAD	18 (27.3)	1645 (29.9)	0.003	10 (33.3)	984 (39.8)	0.82
RCA	14 (21.2)	1305 (23.7)		13 (43.3)	946 (38.3)	
Cx	8 (12.1)	855 (15.6)		4 (13.3)	276 (11.2)	
Number of lesions, n (%)						
0	4 (6.1)	382 (7.0)		0 (0)	29 (1.2)	
1	14 (21.2)	2503 (45.6)	0.003	15 (50.0)	1342 (54.3)	0.001
2	20 (30.3)	1402 (25.5)		6 (20.0)	729 (29.5)	
3	19 (28.8)	835 (15.2)		7 (23.3)	295 (11.9)	
4	9 (13.6)	373 (6.8)		2 (6.7)	76 (3.1)	
PCI, n (%)	41 (62.1)	4344 (79.1)	0.049	28 (93.3)	2383 (96.4)	1.00
IABP, n (%)	1 (1.5)	15 (0.3)	0.32	0 (0)	26 (1.1)	0.96
CABG, n (%)	4 (6.1)	430 (7.8)	0.97	1 (3.3)	61 (2.5)	0.99
GP2b3a inh., n (%)	6 (9.1)	440 (8.0)	0.99	5 (16.7)	801 (32.4)	0.34

Abbreviations: CABG, coronary artery bypass graft; Cx, circumflex; GP2b3a inh., glycoprotein 2b3a inhibitors; IABP, intra-aortic balloon pump; IRA, infarct related artery; LAD, left anterior descending; LM, left main; MR, mitral regurgitation; NSTEMI, non-ST-elevation myocardial infarction; PCI, percutaneous coronary intervention; RCA, right coronary artery; STEMI, ST-elevation myocardial infarction

Table S4. Drugs at discharge

	NSTEMI N=5561			STEMI N=2501		
	Severe MR +	Severe MR -	P	Severe MR +	Severe MR -	P

	N=66	N=5495		N=30	N=2471	
ASA, n (%)	59 (89.4)	5344 (97.3)	0.002	29 (96.7)	2431 (98.4)	0.91
2nd antiplatelet drug, n (%)	54 (81.1)	4629 (84.2)	0.96	30 (100.0)	2321 (93.9)	0.59
Anticoagulant, n (%)	23 (34.8)	1091 (19.9)	0.03	7 (23.3)	266 (10.8)	0.19
Beta-blocker, n (%)	59 (89.4)	4711 (85.7)	0.72	29 (96.7)	2121 (85.8)	0.41
ACEI/ARB/ ARNI, n (%)	58 (87.9)	4557 (82.9)	0.77	24 (80.0)	2033 (82.3)	0.99
Statin, n (%)	48 (72.7)	4650 (84.6)	0.07	29 (96.7)	2088 (84.5)	0.34
Nitrat, n (%)	10 (15.2)	499 (9.1)	0.38	1 (3.33)	177 (7.2)	0.88
Diuretics, n (%)	56 (84.8)	2533 (46.1)	<0.001	22 (73.3)	998 (40.3)	0.004
MRA, n (%)	29 (43.9)	1073 (19.5)	<0.001	14 (46.7)	537 (21.7)	0.01
Ca-blocker, n (%)	11 (16.7)	1127 (20.5)	0.92	0 (0)	268 (10.8)	–

Abbreviations: ACEI, angiotensin-converting enzyme inhibitors; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor neprilysin inhibitor; ASA, acetylsalicylic acid; MR, mitral regurgitation; MRA, aldosterone receptor antagonists; NSTEMI, non-ST-elevation myocardial infarction; STEMI, ST-elevation myocardial infarction

Table S5. Multivariate analysis for MACCE during 12-months follow-up

	OR	95% CI	P
EF, per 1% increase	0.958	0.951–0.964	<0.001
Age, per 1 year increase	1.023	1.016–1.029	<0.001
AF, vs. no AF	1.713	1.430–2.052	<0.001
PAD, vs. no PAD	1.625	1.317–2.005	<0.001
PCI, vs. no PCI	1.400	1.193–1.642	<0.001
Killip class 2 at admission, vs. Killip class 1 at admission	1.442	1.185–1.756	<0.001
Killip class 3 at admission,	1.233	0.822–1.848	0.31

vs. Killip class 1 at admission			
Killip class 4 at admission, vs. Killip class 1 at admission	2.071	1.243–3.449	0.005
Diabetes, vs. no diabetes	1.260	1.098–1.446	0.001
LVEDD, per 1 mm increase	0.991	0.986–0.996	0.001
Diuretics at discharge, vs. no diuretics at discharge	1.253	1.092–1.439	0.001
ACEI/ARB/ARNI at discharge, vs. no ACEI/ARB/ARNI at discharge	0.790	0.668–0.934	0.006
STEMI, vs. no STEMI	0.823	0.710–0.953	0.009
COPD/asthma, vs. no COPD/asthma	1.329	1.038–1.701	0.02
CAD, vs. no CAD	0.839	0.706–0.996	0.045

Abbreviations: ACEI, angiotensin-converting enzyme inhibitors; AF, atrial fibrillation; ARB, angiotensin receptor blocker; ARNI, angiotensin receptor neprilysin inhibitor; CAD, coronary artery disease; CI, Confidence Interval; COPD, chronic obstructive pulmonary disease; EF, ejection fraction; LVEDD, left ventricular end diastolic diameter; MACCE, major adverse cardiac and cerebrovascular events; PAD, peripheral artery disease; PCI, percutaneous coronary intervention; STEMI, ST-elevation myocardial infarction