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Original Research Article

Clinical and echocardiographic features of elderly patients with myocardial infarction

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ABSTRACT

Background: Acute myocardial infarction (MI) is one of the leading causes of mortality worldwide. Elderly patients comprise a growing proportion of the MI population. We sought to characterize the clinical, anamnestic, laboratory, and echocardiographic data of elderly MI patients (>70 years).
Methods: We studied 104 patients with acute MI admitted to our regional cardiology center from January 2024 to November 2025. We divided the study population into two groups: 46 patients >70 years and 58 patients ≤70 years. We compared the clinical data, laboratory results, echocardiographic data, and results of coronary angiography between the study groups using non-parametric statistics.
Results: Elderly MI patients presented a higher proportion of females (45.7% vs. 15.1%, p=0.001), lower rates of obesity (23.9% vs. 44.8%, p=0.038), and reduced estimated glomerular filtration rate (67.8 vs. 79.8 ml/min/1.73m², p<0.05). Elderly MI patients presented reduced left ventricular dimensions in echocardiographic data but comparable ejection fractions. Elderly MI patients presented comparable vessel involvement in the results of coronary angiography but underwent less frequent stenting (41.3% vs. 63.7%, p=0.029) and bypass grafting (47.8% vs. 22.4%, p=0.011).
Conclusions: Despite having a similar coronary pathology elderly MI patients have different clinical and demographic data with different revascularization approaches. These findings emphasize the need for age-specific diagnostic and therapeutic strategies to optimize outcomes in this growing patient population.

Keywords: Acute myocardial infarction, Elderly, Echocardiography, Coronary angiography, Revascularization, Risk factors

INTRODUCTION

Acute myocardial infarction (MI) represents an intense injury to the myocardium. It can be detected by elevated cardiac biomarkers such as troponin or characteristic ischemic changes on an electrocardiogram (ECG).[1] Although the global incidence of MI has seen a decline in recent years, the associated fatality rate is not declined appropriately, and it continues to be a leading cause of death worldwide.[2,3] Among cardiovascular diseases, coronary artery disease (CAD) is the condition with highest prevalence and mortality burden. A trend that has persisted and even increased in certain regions from 1990 to 2022.[3,4] The pathogenesis of MI fundamentally involves a failure of coronary blood supply to meet myocardial demand, most commonly due to the rupture or erosion of an atheromatous plaque with superimposed thrombosis.[5] The clinical presentation, risk factor profile, and prognosis of MI, however, they vary across all age groups. Elderly patients, who represent a larger part of the MI population, present a distinct clinical picture compared to their younger counterparts.[6] Although the chest pain is the most common symptom of MI, its prevalence decreases with increasing age. Atypical presentations are far more common in the elderly population; instead of classic chest pain, they often present with dyspnea, syncope, confusion, or generalized weakness, which can doubt and delay diagnosis also the timely intervention.[6,7] This diagnostic challenge is encouraged by a different risk factor profile. Studies consistently show that elderly patients with MI are more likely to be male and have a higher prevalence of comorbidities such as hypertension, diabetes mellitus, and atrial fibrillation (AF), while traditional risk factors like smoking and dyslipidemia are more prominent in younger patients.[8,9] Furthermore, this population experiences a higher incidence of in-hospital complications and mortality, particularly from heart failure, contributing to significantly worse short- and long-term outcomes.[7-10]

In this context, echocardiography emerges as an indispensable tool for the comprehensive evaluation of elderly patients with MI. It provides important, non-invasive information into cardiac structure and function that are compulsory for the diagnosis, risk stratification, and management. Other than simply confirming the diagnosis by assessing regional wall motion abnormalities, echocardiography can quantify the extent of myocardial damage. Reduced left ventricular ejection fraction (LVEF) is a powerful predictor of major adverse cardiac events in older adults following MI.[10,11] Furthermore, detailed echocardiographic assessment can reveal age-related changes in diastolic function, left ventricular remodeling, and valvular pathology that significantly influence prognosis and therapeutic strategies.[11,12]

METHODS

The study included 104 patients with acute MI who were admitted to the Grodno Regional Clinical Cardiological Center (Belarus) for treatment from January 2024 to November 2025. Patients were divided into 2 age categories: Group 1 included 46 patients >70 years old, and Group 2 included 58 patients ≤70 years old. Exclusion criteria from the study were: chronic rheumatic heart disease, acute myocarditis, pericarditis or endocarditis, pulmonary embolism, acute aortic dissection, valvular pathology of the heart requiring surgical correction, and severe concomitant extracardiac pathology.

In this study, patients were diagnosed with MI based on clinical symptoms, signs, ECG findings, and cardiac biomarker values, and they underwent coronary angiography with possible percutaneous coronary intervention (PCI) at the same center according to the Judkins method (1967) in the X-ray operating room on the Philips Azurion 7 and GE Innova 3100 IQ angiographic units. The computer program of the GE Innova 3100 IQ unit was used for the quantitative assessment of stenoses. Statistical analysis was performed using the STATISTICA 12.0 software package with a preliminary check for normal distribution using a distribution histogram. Quantitative data, the distribution of which was not normal, were given as a median, 25% and 75% quartiles. Since most of the quantitative characteristics did not obey the normal distribution law, non-parametric methods were used for comparison. The Mann-Whitney test was used to assess differences in quantitative traits between two independent groups. At a significance level of p less than 0.05, it was believed that the studied indicator in the compared groups had statistically significant differences. The study was performed in accordance with Good Clinical Practice standards and the principles of the Declaration of Helsinki. Written informed consent was obtained from all participants prior to inclusion in the study.

RESULTS

Clinical and anamnestic characteristics of the studied patients are presented in Table 1. The comparison of the patients showed a significant difference in the demographic characteristics of the two groups (Table 1). Patients in Group 1 were significantly older, with a median age of 77 years compared to 60.7 years in Group 2 ($p<0.001$). From the table, it is evident that there was a higher percentage of males in the younger group compared to the elderly group (84.9% vs 54.3%, $p=0.001$), and this may be attributed to the effect of estrogen in premenopausal women, which reduces their risk of cardiovascular disease until they are elderly. As a result, there was a significant increase in the proportion of women in the elderly group.

Although the median body mass index was similar in the two groups ($p>0.05$), the proportion of obese patients was significantly higher in Group 2 (44.8% vs. 23.9%, $p=0.038$), and it may therefore act as a potent risk factor that hastens the onset of MI. There were no significant differences in the distribution of obesity subtypes and the proportion of overweight patients ($p>0.05$). In the type of MI, the two groups had a similar proportion of STEMI and N-STEMI ($p>0.05$), with inferior and inferior-lateral MI being the most common. Moreover, the two groups were well-matched regarding comorbidities such as diabetes mellitus and AF, with no statistically significant differences ($p>0.05$). Laboratory parameters of patients are presented in Table 2. In the clinical blood test, some parameters showed significant intergroup differences. Significantly higher RBC (4.7 vs. 4.3, $p<0.001$), hemoglobin (139.9 vs. 127.5 g/l, $p<0.001$, WBC (9.2 vs. 7.6, $p=0.001$), and platelet counts (236.5 vs. 196.2, $p=0.003$) were observed among the younger population as compared to the older population. The renal function tests showed significant intergroup differences, as Group 1 had lower estimated glomerular filtration rates, by 67.8 vs. 79.8 ml/min/1.73m^2, although the urea and creatinine levels were similar. In the lipid profile, the values of cholesterol, LDL, HDL, and triglycerides were similar in both groups. However, the values of liver enzymes, as reflected by the level of alanine aminotransferase, were significantly increased in Group 2, by 42.6 vs. 30.0 IU/l, although the aspartate aminotransferase level was similar. The electrolyte levels showed that the level of sodium was increased in Group 1, by 138.7 vs. 137.1 mEq/l, although the level of potassium was similar. The values of NT-proBNP and D-dimers, which were markedly increased in Group 1, and the level of Troponin, which was markedly increased in Group 2, were similar (Table 2).

Table 1: Clinical characteristics of patients (Me (25%;75%)).

Parameters	Group 1 (n=46)	Group 2 (n=58)	P value
Male gender, N (%)	25 (54.3)	49 (84.9)	0.001
Age (years)	77 (74;79)	60.7 (57;67)	<0.001
Body mass index, kg/m2	28.8 (24.2;30)	29.83 (26.1;33.3)	>0.05
Obesity, N (%)	11 (23.9)	26 (44.8)	0.038
Class 1, N (%)	5 (10.86)	15 (25.8)	>0.05
Class 2 and 3, N (%)	6 (13)	11 (18.9)	>0.05
Overweight, N (%)	17 (36.9)	17 (29.3)	>0.05
Stemi, N (%)	34 (73.9)	41 (70.6)	>0.05
Anterior, N (%)	9 (19.5)	12 (20.6)	>0.05
Inferior, N (%)	9 (19.5)	11 (18.9)	>0.05
Lateral, N (%)	2 (4.3)	0	>0.05
Anterior-lateral, N (%)	5 (10.8)	5 (8.6)	>0.05
Inferior-lateral, N (%)	10 (21.7)	13 (22.4)	>0.05
N-stemi, N (%)	12 (26)	17 (29.3)	>0.05
Diabetes mellitus, N (%)	12 (26)	11 (18.9)	>0.05
Atrial fibrillation, N (%)	13 (28.2)	12 (20.6)	>0.05

Table 2: Laboratory parameters of patients (me (25%;75%)).

Parameters	Group 1 (n=46)	Group 2 (n=58)	P value
RBC, 1012/l	4.3 (4.0;4.6)	4.7 (4.3;5.0)	<0.001
Hemoglobin, g/l	127.5 (116;140)	139/9 (131.2;150.7)	<0.001
WBC, 109/l	7.6 (6;8.9)	9.2 (7.6;10.5)	0.001
ESR, mm/h	19.1 (9;25)	16.8 (9;22)	>0.05
Platelets, 109/l	196.2 (172;222)	236.5 9193.2;273.5)	0.003
Urea, mmol/l	8.1 (4.8;7.7)	6.2 (4.7;7.7)	>0.05
Creatinine, µmol/l	93.7 (74;109)	88 (70.2;93.7)	>0.05
EGFR, ml/min/1.73m2	67.8 (53;78.8)	79.8 (67.2;93)	0.007
Total cholesterol, mmol/l	4.7 (3.8;5.5)	4.9 (3.7;5.9)	>0.05
LDL, mmol/l	2.4 (1.9;3)	2.5 (1.8;2.9)	>0.05
HDL, mmol/l	1.17 (0.9;1.33)	1.04 (0.78;1.18)	>0.05
Triglycerides, g/l	1.8 (1.5;2.1)	1.71 (1.2;1.95)	>0.05
Glucose, mmol/l	7.5 (5.1;8.3)	7.1 (5.0;7.4)	>0.05
AST, IU/l	70.9 (21.1;73)	85.1 (22.2;119.7)	>0.05
ALT, IU/l	30.0 (16;32.4)	42.6 (21.5;46.5)	0.002
Sodium, mEq/l	138.7 (137;141)	137.1 (135;139)	0.005
Potassium, mEq/l	4.2 (3.9;4.6)	4.2 (3.9;4.5)	>0.05
NT-proBNP, pg/ml	5222.2 (2559.5;4531)	2047.2 (1074;2626)	>0.05
D-dimers, pg/ml	1797.2 (1606;2287)	1346.44 (1271.6;1421.2)	>0.05
Troponin, ng/l	8977.6 (332.7;9806)	13471 (465.75;19360.25)	>0.05

Note: RBC -red blood cells; WBC-white blood cells; ESR-erythrocyte sedimentation rate; EGFR-estimated glomerular filtration rate; LDL-low-density lipoproteins; HDL-high-density lipoproteins; AST-aspartate aminotransferase; ALT-alanine aminotransferase.

Table 3: Echocardiographic parameters of patients (me (25%;75%)).

Parameters	Group 1 (n=46)	Group 2 (n=58)	P value
LA diameter (2 chamber), mm	40.5 (38;43.5)	39.1 (37;41)	>0.05
LA diameter (medial to lateral), mm	54.2 (49.2;58)	52.1 (48;56)	>0.05
LA diameter (front to back), mm	38 (35;41)	37.8 (35;40.5)	>0.05
RA diameter (medial to lateral), mm	36.5 (33;38)	36.1 (34;38)	>0.05
RA diameter (front to back), mm	49.5 (45;53)	36.1 (34;38)	>0.05

Continued.

Parameters	Group 1 (n=46)	Group 2 (n=58)	P value
LV ESD, mm	34.1 (32;36)	36.2 (32;99)	0.044
LV EDD, mm	49.1 (46;52)	51.2 (49;53)	0.033
M-mode			
LV ESV, ml	51.2 (39;58.2)	59.3 (41;67.2)	>0.05
LV EDV, ml	119.6 (97.2;135.7)	131.1 (118;142)	>0.05
LVEF, N (%)	58 (55;63)	55.6 (52;60.5)	>0.05
B-mode			
LV ESV, ml	54.1 (40;61.7)	61.3 (44;77)	>0.05
LV EDV, ml	110.2 (90.7;129.5)	123.1 (106;148)	0.048
Lvef, N (%)	52.8 (50;57.7)	51.4 (47;57)	>0.05
Septal thickness (systolic), mm	17.1 (16;18)	16.8 (16;18)	>0.05
Septal thickness (diastolic), mm	13.0 (12;14)	12.9 (12;14)	>0.05
Posterior wall thickness (systolic), mm	15.6 (15;16.7)	14.7 (13;16)	>0.05
Posterior wall thickness (diastolic), mm	11.5 (10;13)	11.1 (10;12)	>0.05
Right ventricle diameter, mm	25.6 (24;27)	25.9 (24;28)	>0.05
TAPSE, mm	19 (18;20.7)	19.1 (17.7;21)	>0.05
Contractility index	1.2 (1.0;1.44)	1.3 (1.1;1.5)	0.03
Akinesis areas	1.3 (0;2.7)	2.1 (0;4)	>0.05
Hypokinesis areas	1.3 (0;2)	1.8 (0;3)	>0.05

Abbreviations: LA-left atrium; RA-right atrium; LV-left ventricle; ESD-end-systolic diameter; EDD-end-diastolic diameter; ESV-end-systolic volume; EDV-end-diastolic volume; LVEF-left ventricular ejection fraction; TAPSE-tricuspid annular plane systolic excursion.

Table 4: Coronary angiography parameters.

Parameters	Group 1 (n=46)	Group 2 (n=58)	P value
Affected vessel	-	-	-
Left main coronary artery, N (%)	15 (32.6)	12 (20.6)	>0.05
Left anterior descending artery, N (%)	36 (78.2)	37 (63.7)	>0.05
Left circumflex artery, N (%)	31 (67.3)	36 (62.0)	>0.05
Right coronary artery, N (%)	33 (71.7)	41 (70.6)	>0.05
Stenting, N (%)	19 (41.3)	37 (63.7)	0.029
Minoca, N (%)	5 (10.8)	5 (8.6)	>0.05
CABG, N (%)	22 (47.8)	13 (22.4)	0.011
Number of vessel disease (stenosis >50%)	-	-	
Affected vessel N (%)	9 (19.5)	10 (17.2)	>0.05
Affected vessels N (%)	11 (23.9)	22 (37.9)	>0.05
Or more affected vessels N (%)	23 (50)	20 (34.4)	>0.05

Note: MINOCA-myocardial infarction with non-obstructive coronary arteries; CABG-coronary artery bypass graft.

Based on the transthoracic echocardiography results (Table 3), patients in both groups showed generally similar atrial sizes, with no significant differences found in the left atrial dimensions in all three planes and right atrial dimensions (p>0.05). However, significant differences were found in the ventricular dimensions, with Group 2 showing larger left ventricular dimensions, as indicated by the higher LV end-systolic diameter (36.2 vs. 34.1 mm, p=0.044) and LV end-diastolic diameter (51.2 vs. 49.1 mm, p=0.033). This was also found to be true when volume measurements were done using the B-mode, where the LV end-diastolic volume was significantly higher in Group 2 (123.1 vs. 110.2 ml, p=0.048). However, the left ventricular ejection fraction, measured using both M-mode and B-mode, was not significantly different between the groups (p>0.05). However, the LVEF was well preserved and did not differ significantly between the groups. The contractility index was significantly higher in Group 2 (1.3 vs. 1.2, p=0.03), although the akinetic and hypokinetic areas were similar (p>0.05). The septal and posterior wall thickness measurements in both systole and diastole, as well as right ventricular parameters such as diameter and TAPSE, were similar in both groups (p>0.05). The coronary angiography showed a clear difference in the intervention strategies between the groups, despite the similarities in the patterns of coronary atherosclerosis (Tab There were no significant differences in the distribution of the involved vessels among the major coronary arteries, which included the left main, left anterior descending, left circumflex, and right coronary arteries (p>0.05). Also, there were no significant differences in the incidence of myocardial infarction with non-obstructive coronary arteries or the number of involved vessels with stenosis >50% (p>0.05). However, there were significant differences in the revascularization techniques used.

Stenting was more common in Group 2 than in Group 1 (63.7% vs. 41.3%, p=0.029). On the other hand, coronary artery bypass grafting was done more in Group 1 than in Group 2 (47.8% vs. 22.4%, p=0.011), indicating a preference for surgical revascularization in this patient group. Although not statistically significant, the elderly population had higher rates of three-vessel disease (50% vs. 34.4%), which could explain the higher CABG rates. The pattern of coronary vessel involvement and MINOCA rates was comparable among the groups.

DISCUSSION

Acute MI is known to be one of the leading causes of death and disability in older adults.[1] Due to a number of factors, including the complex physiological changes that occur with aging and the pathological processes that arise from the accumulation of polymorbidity, patients in this age group have certain characteristics regarding the clinical presentation, diagnosis, treatment, and post-infarction period. According to the literature, the vast majority of people develop polymorbidity by age 60; after age 75, the number of comorbidities often reaches 4-6. Less than 7% of older adults are generally healthy and do not have serious chronic diseases.[2] Moreover, in the presence of comorbidities, mortality over three years increases progressively and exceeds 80% in the presence of two or more comorbidities.[3] At the same time, the combination and overlap of various pathophysiological mechanisms for the development of the primary and comorbid conditions, the constant use of medications, often forced polypharmacy, and decreased reactivity of the body lead to a higher incidence of latent and atypical forms of acute MI.[4,5] It should also be taken into account that elderly people often have various psychoneurological disorders, accompanied by a distorted perception of the symptoms of CAD, which leads to an underestimation of their severity.[6,7]

This study has demonstrated that elderly MI patients present with a different clinical profile, thereby requiring different management strategies. A predominance of females among the elderly population is consistent with the well-recognized phenomenon of estrogen-related cardioprotective effects, which are known to decline after menopause. It is noteworthy that obesity is more commonly seen among the younger population, thereby indicating it as a potent risk factor for the acceleration of the disease process. In the hematological profile, the elevated counts of blood cells among the younger population may reflect a more vigorous inflammatory response to the infarct.

Among the echocardiographic profiles, the paradox of increased dimensions of the ventricle along with a maintained ejection fraction among the younger population may reflect a more vigorous capacity for post-infarct remodeling. Most strikingly, the management strategies for revascularization differ significantly, with a preference for CABG among the elderly, possibly due to the trend for triple-vessel disease. These data highlight the need for increased attention to older patients and improved screening measures for the identification and timely correction of risk factors, treatment of comorbidities, and secondary prevention of cardiovascular events, especially given the fact that 40% of patients had not been observed for coronary artery disease before the index MI. Patient education for this cohort is also crucial, as it serves two purposes: on the one hand, patient awareness increases treatment adherence and improves the effectiveness of secondary prevention, and on the other, it teaches patients to pay attention to important changes in their well-being and seek medical attention promptly.[12] At the same time, alertness on the part of healthcare workers regarding atypical, including low-symptom forms of acute MI in individuals of this age category, can contribute to improving survival rates by timely delivery of patients to specialized medical institutions.

This particular study, comparing 46 patients under 70 years old with 58 patients over 70 years old, emphasizes the particular pattern of MI in the elderly. The elderly patients more often had atypical presentations, a higher incidence of comorbid conditions such as hypertension and diabetes, and more severe echocardiographic abnormalities, including lower left ventricular ejection fraction and more severe diastolic dysfunction.

The implications of this study are far-reaching. The atypical presentations in elderly patients can lead to a delay in life-saving therapy, thereby increasing morbidity and mortality. In addition, echocardiographic findings of wall motion abnormalities and systolic dysfunction are extremely useful prognostic predictors, which should dictate aggressive therapy and close follow-up.

Limitations

The main limitation of this study is the small sample size, from a single hospital. Additionally, other important factors that may play a role in these findings, including genetic polymorphisms and blood clotting factor levels, were not assessed. Nonetheless, our results must be interpreted with caution and larger studies with higher patient numbers should be carried out to confirm our findings.

CONCLUSION

It is important to have a complete understanding of the particular pattern of MI in the elderly in order to optimize outcomes in these high-risk patients. The use of bedside evaluation and echocardiography to identify high-risk features provides a framework for individualized therapy. With the aging population worldwide, the challenge of MI in the elderly, through prevention, early detection, and appropriate therapy, remains a high priority for cardiovascular medicine.

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REFERENCES

1. Thygesen K, Alpert JS, Jaffe AS, Chaitman BR, Bax JJ, Morrow DA, et al. Fourth universal definition of myocardial infarction (2018). Eur Heart J. 2019;40(3):237-69.
2. Krumholz HM, Normand SLT, Wang Y. Twenty-year trends in outcomes for older adults with acute myocardial infarction in the United States. JAMA Netw Open. 2019;2(5):e191938.
3. GBD 2019 Diseases and Injuries Collaborators. Global burden of 369 diseases and injuries in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet. 2020;396(10258):1204-22.
4. Muntner P, Colantonio LD, Cushman M, Goff DC, Howard VJ, Howard G, et al. Cardiovascular events in US adults aged ≥80 years: incidence, risk factors, and outcomes. Circ Cardiovasc Qual Outcomes. 2026;19:e012379.
5. Libby P, Pasterkamp G, Crea F, Jang IK. Reassessing the mechanisms of acute coronary syndromes. Circ Res. 2019;124(1):150-60.
6. Gupta A, Hajduk AM, Krumholz HM, Orkaby AR, Murphy TE, Forman DE, et al. Presentation, treatment, and outcomes of the oldest-old patients with acute myocardial infarction: the SILVER-AMI study. Am J Med. 2021;134(1):95-103.
7. Grosmaitre P, Le Vavasseur O, Yachouh E, Le Gal G, Decker L, Claessens YE, et al. Significance of atypical symptoms for the diagnosis and management of myocardial infarction in elderly patients admitted to emergency departments. Arch Cardiovasc Dis. 2013;106(11):586-92.
8. Sagris M, Antonopoulos AS, Theofilis P, Oikonomou E, Antonopoulos A, Siasos G, et al. Young and older patients with acute myocardial infarction: differences in risk factors and angiographic characteristics. Hellenic J Cardiol. 2024;S1109-9666(24)00112.
9. Ait Mokhtar O, Bouzid I, Boulehnoune N, Benkhelifa M, Hachemaoui F, Khellaf M, et al. Characteristics and in-hospital mortality of elderly patients admitted for ST-elevation coronary syndrome undergoing primary coronary angioplasty in an Algerian tertiary center. Ann Cardiol Angeiol (Paris). 2025;74(2):101857.
10. Jalali A, Rana MA, Sohail H, Hassan A, Iqbal R, Khan MS, et al. Predictors of major adverse cardiac and cerebrovascular events after percutaneous coronary intervention in older adults: a systematic review and meta-analysis. BMC Geriatr. 2024;24(1):326.
11. Prasad SB, Lin A, Blyth S, De Maria GL, Steeds RP, Senior R, et al. Novel combined echocardiographic score comprising prognostically validated measures of left ventricular size and function to predict long-term survival following myocardial infarction: a proposal to improve risk stratification. Echocardiography. 2024;41(8):e15890.
12. Sumin AN, Gaifulin RA, Korok EV, Belyaev AA, Kuznetsov VA, Shalaev SV, et al. Dynamics of parameters of left ventricular diastolic function in elderly patients with myocardial infarction. Kardiologiia. 2003;43(6):26-31.

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