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Benefits from revascularisation therapy in the elderly with acute myocardial infarction. Comparative analysis of patients hospitalised in 1992–1996 and in 2005–2006

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Abstract

Background: Coronary artery disease in the elderly is associated with multilevel atherosclerosis and chronic co-morbidities.

Aim: To determine benefits from revascularisation in the elderly.

Methods: A total of 830 patients over 65 years with ST-segment elevation myocardial infarction (STEMI) were included. Of them, 339 admitted in 1992–1996 (38.5% STEMI population hospitalised in 1992–1996) (group 1) and 491 (55.2% STEMI population) admitted in 2005–2006 (group 2) were compared. We examined patient characteristics, the course of hospitalisation, the type of therapy and its effect on in-hospital and long-term prognosis (6-month follow-up).

Results: The proportion of patients over 65 has increased significantly from 38.5% in 1992–1996 to 55.2% in 2005–2006 ($p < 0.001$). In 1992–1996 fibrinolysis was administered in 11.2% of patients while 88.8% received conservative treatment. In 2005–2006 reperfusion therapy was used in 52.2% of patients (15.1% fibrinolysis, 37.1% primary angioplasty). The in-hospital and 6-month mortality tended to be lower in the more recent group (21.5% *vs* 18.5% and 28% *vs* 23.8%, NS, respectively). In group 1 there were 22.6% of deaths among those receiving conservative treatment *versus* 13.2% in patients submitted to reperfusion ($p = 0.18$). In group 2 in-hospital mortality was the lowest in patients undergoing invasive treatment which was associated with a 62% decrease in 6-month mortality as compared with those receiving conservative treatment ($p < 0.001$).

Conclusions: Invasive treatment significantly improves in-hospital and long-term survival in older patients with STEMI. Lack of mortality reduction was related to worse clinical presentation of the currently hospitalised older patient.

Key words: myocardial infarction, elderly, reperfusion strategy, prognosis

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INTRODUCTION

Cardiovascular diseases are the most frequent diagnosis in the elderly and represent the main cause of mortality in women and men older than 65. Over 80% of all the deaths from cardiovascular causes are recorded in patients older than 65 years and 60% — in patients older than 75 [1]. Coronary artery disease (CAD) in the elderly is currently one of the main therapeutic challenges, taking into account that the population of elderly patients has been growing over the last decades. According to data from the end of the 20th century, 55% of patients with ST-segment elevation myocardial infarction (STEMI) were older than 65 at that time; currently the percentage is estimated to exceed 60% [2, 3]. Additionally, the course of the CAD in this patient group is more severe, due to more advanced, multi-level atherosclerosis and numerous co-morbidities. On the other hand, a huge progress has been observed, concerning

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Table 1. Clinical characteristics of the study group

Characteristic	Group 1; n = 339 (years 1992–1996)	Group 2; n = 491 (years 2005–2006)	P
Age (years ± SD)	73.0 ± 5.5	75.7 ± 6.3	< 0.0001
Female gender	41.6%	46.6%	0.15
Prior myocardial infarction	22.4%	16.1%	0.03
Diabetes	27.7%	23.0%	0.13
Hypertension	42.8%	69.0%	< 0.0001
Hypercholesteroleamia	25.7%	49.1%	< 0.0001
Smoking (current)	33.0%	15.1%	< 0.0001

acute coronary syndrome (ACS) therapy, including, first of all, new reperfusion techniques and advanced pharmacotherapy.

The aim of the study was to answer the question whether advancement in the treatment of myocardial infarction (MI) extends to the population of older patients and brings measurable benefits in terms of prognosis in this patient population.

METHODS

Study group

Two populations of STEMI patients aged over 65 were studied retrospectively. Group 1 consisted of patients treated in the years 1992–1996 and group 2 — of patients treated in the years 2005–2006. In group 1, 339 consecutive elderly patients admitted with STEMI were included (38.5% of the total STEMI population of that period). Group 2 consisted of 491 patients (55.2% of the total STEMI population aged 65+ from that period). Enzymatic markers of necrosis (available at the time, i.e. transaminases and creatine kinase) together with ST segment elevation were the criteria for inclusion in group 1. In group 2, the new STEMI definition (2000) was taken into account, and thus, TnT elevation was the main confirmation criterion for myocardial necrosis.

Study design

Clinical characteristics, the course of hospitalisation in relation to the type of therapy applied and the impact of treatment on the long-term prognosis (6-month follow-up) were analysed.

Mortality data of group 2 patients were retrieved from Polish Acute Coronary Syndrome Registry (PL-ACS) [4] and from the Regional National Health Fund Office.

Statistical analysis

Continuous variables are presented as mean values ± standard deviation or as median and inter-quartile range, depending on data distribution. The significance of differences between mean values was tested either by Student t test or by Mann-Whitney U test. Categorical data were compared by χ^2 test. A multivariable analysis was performed in order to identify independent predictors of mortality. Calculations and statistical analyses were carried out by Statistica PL 6.1 statistical package (StatSoft Inc).

RESULTS

Mean age of the elderly patients (i.e. patients aged 65+) hospitalised for STEMI between 2005 and 2006 was higher than between 1992 and 1996 (Table 1).

The significant increase of the proportion of patients 65+ over the period between the two study periods was noted — it was 38.5% in the years 1992–1996 and 55.2% in the years 2005–2006 ($p < 0.001$). In both groups, the percentage of women admitted for MI was relatively high (41.6% in group 1 and 46.6% in group 2). In the more recently (2005–2006) hospitalised elderly patients, hypertension and dyslipidaemia were more prevalent, whereas the proportion of smokers was lower (Table 1).

Patients initially treated conservatively were older, and the proportion of women was higher in this subgroup. Reperfusion therapy was less frequently administered in diabetic patients. In group 1 the difference was not statistically significant, whereas in diabetic patients hospitalised more recently 18.9% received interventional treatment, 12.7% received fibrinolysis and as many as 30.1% of patients were treated conservatively (Table 2).

In both study groups, similar MI site distribution and similar proportion of patients with conduction disturbances were found. Elderly patients of the period 2005–2006 had lower ejection fraction (EF), with significantly smaller proportion of patients with EF 40–50% and EF < 20%; however, the initial clinical assessment on admission showed no difference in the frequency of heart failure according to Killip-Kimball classification (the vast majority of recently hospitalised patients were in class 1) (Table 3).

In the years 2005–2006, reperfusion therapy was less frequently administered in patients with Killip class 3 and 4. Hospitalisation time was shorter in group 2 (by 7 ± 9 days),

Table 2. Clinical characteristics of the study group with relation to myocardial infarction treatment strategy

Parameter	Group 1; n = 339 (years 1992–1996)			Group 2; n = 491 (years 2005–2006)			P_{ct}	P_{ci}	P_{ti}	$P_{cI/II}$	$P_{tI/II}$
	Conservative n = 301	Thrombolysis n = 38	P	Conservative n = 219	Thrombolysis n = 71	Interventional n = 201					
Age (years ± SD)	73.5 ± 5.6	69.7 ± 3.0	< 0.0001	77.8 ± 6.8	75.7 ± 5.9	73.6 ± 5.1	0.019	< 0.0001	0.011	< 0.0001	< 0.0001
Female gender [%]	42.9	31.6	0.18	53	39.4	42.3	0.047	0.029	0.68	0.022	0.42
Prior myocardial infarction [%]	22.9	18.4	0.53	18.3	16.9	13.4	0.79	0.18	0.47	0.20	0.84
Diabetes [%]	27.2	31.6	0.57	30.1	12.7	18.9	< 0.0001	0.0077	0.23	0.47	0.017
Hypertension [%]	43.2	39.5	0.66	69.9	54.9	73.1	0.021	0.46	0.0046	< 0.0001	0.12
Hypercholesterolaemia [%]	25.9	23.7	0.77	39.3	33.8	65.2	0.41	< 0.0001	< 0.0001	0.0012	0.27
Smoking [%]	31.2	47.4	0.046	13.7	11.3	17.9	0.60	0.23	0.19	< 0.0001	< 0.0001

P_{ct} — conservative treatment *vs* thrombolysis; P_{ci} — conservative treatment *vs* interventional treatment; P_{ti} — thrombolysis *vs* interventional treatment; $P_{cI/II}$ — conservative treatment I *vs* conservative treatment II; $P_{tI/II}$ — thrombolysis I *vs* thrombolysis II

Table 3. Comparison of the course of myocardial infarction

Parameter	Group 1; n = 339 (1992–1996)	Group 2; n = 491 (2005–2006)	P
MI site			
Anterior	43.4%	41.3%	0.55
Inferior	39.2%	44.8%	0.11
Other	17.4%	13.9%	0.16
Intraventricular conduction abnormality			
RBBB	6.5%	4.5%	0.2
LBBB	5.3%	4.9%	0.78
Killip class on admission			
1	17.7%	57.0%	< 0.0001
2	59.3%	26.7%	< 0.0001
3	9.1%	6.5%	0.15
4	13.9%	9.8%	0.07
LVEF			
Normal	35%	18.1%	< 0.001
40–50%	37.2%	56.6%	< 0.001
20–40%	27.8%	23.6%	0.49
< 20%	0%	1.7%	0.04

MI — myocardial infarction; RBBB — right bundle branch block; LBBB — left bundle branch block; LVEF — left ventricular ejection fraction

with no significant changes related to the type of treatment (Table 4).

In the years 1992–1996, reperfusion therapy (fibrinolysis) was administered in as little as 11.2% of patients. The remaining patients were treated conservatively. The only thrombolytic agent available at that time was streptokinase.

In the recent period (2005–2006) reperfusion was administered to 52.2% of the study patients, including fibrinolysis in 15.1% (tPA 80%, streptokinase 20%) and primary percutaneous coronary intervention (pPCI) in 37.1% (Fig. 1). Stent implantation in this age group was very common — 91.2% of the patients received stents, and TIMI 3 flow was achieved in 90.7%.

In-hospital medical therapy was extended, with new antiplatelet drugs, low molecular weight heparins and statins. The use of the remaining standard drugs significantly increased in the contemporary population of patients admitted for MI (Table 5).

In both study groups in-hospital mortality was comparably high (Fig. 2). The highest mortality rate was found in the elderly patients in whom reperfusion therapy was not administered. In the study group from 1992–1996 mortality rate was 22.6% in patients treated conservatively and 13.2% when fibrinolysis was used. In the contemporary group in-hospital mortality rate was by far the lowest in patients receiving interventional treatment (Fig. 3).

Table 4. Comparison of cardiovascular clinical comparison status and length of hospitalisation by myocardial infarction treatment strategy

Parameter	Group 1; n = 339 (years 1992–1996)			Group 2; n = 491 (years 2005–2006)							
	Conservative n = 301	Thrombolysis n = 38	P	Conservative n = 219	Thrombolysis n = 71	Interventional n = 201	P_{ct}	P_{ci}	P_{ti}	$P_{ci/i}$	$P_{ti/i}$
Killip on admission [%]											
1	18.6	10.5	0.22	47.9	60.6	65.7	0.065	0.0003	0.44	< 0.0001	< 0.0001
2	58.1	68.4	0.22	29.7	21.1	25.4	0.16	0.32	0.47	< 0.0001	< 0.0001
3	9.6	5.3	0.55	9.6	5.6	3.5	0.30	0.012	0.49	0.99	1.0
4	13.6	15.8	0.72	12.8	12.7	5.5	0.98	0.0099	0.046	0.78	0.65
Hospitalisation (days)	17 ± 9	19 ± 7	0.13	10 ± 7	10 ± 6	10 ± 6	0.91	0.44	0.51	< 0.0001	< 0.0001

Abbreviation as in Table 2

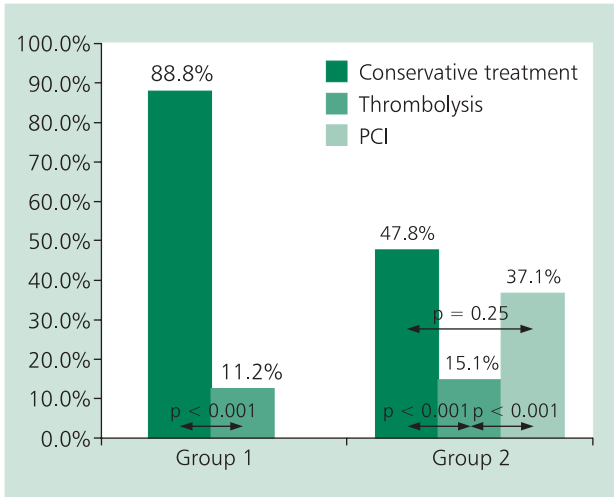

Figure 1. Strategy of myocardial infarction treatment; Group 1 — years 1992–1996, Group 2 — years 2005–2006

Table 5. In-hospital pharmacological treatment

Drugs	Group 1; n = 339 (1992–1996)	Group 2; n = 491 (2005–2006)	P
ASA	86.1%	92.9%	0.002
Ticlopidine	–	27.9%	–
Clopidogrel	–	39.9%	–
IIb/IIIa Inhibitor	–	11.6%	–
Antithrombotic treatment	68.7%	77.4%	0.007
Heparin	68.7%	35.2%	< 0.001
LMWH	–	62.9%	
Beta-adrenolytics	38.6%	74.8%	< 0.001
ACEI	66.7%	76.4%	0.002
Statins	–	74.1%	–
Nitrates	89.4%	56.4%	< 0.001

ASA — acetylsalicylic acid; LMWH — low molecular weight heparins; ACEI — angiotensin converting enzyme inhibitors

During 6-month follow-up, the mortality rate in the two study groups was also comparably high (Fig. 4). In both groups, the mortality rate was by far the highest in patients treated conservatively. The most favourable long-term prognosis was found in patients in whom pPCI was performed, as the interventional treatment reduced 6-month mortality by 62% in comparison with conservative treatment. Mortality reduction in patients receiving thrombolytic therapy in both groups was non-significant (Fig. 5).

As demonstrated by multivariable analysis of 6-month mortality in the study groups, advanced age, Killip class on admission, and non-interventional treatment were the fac-

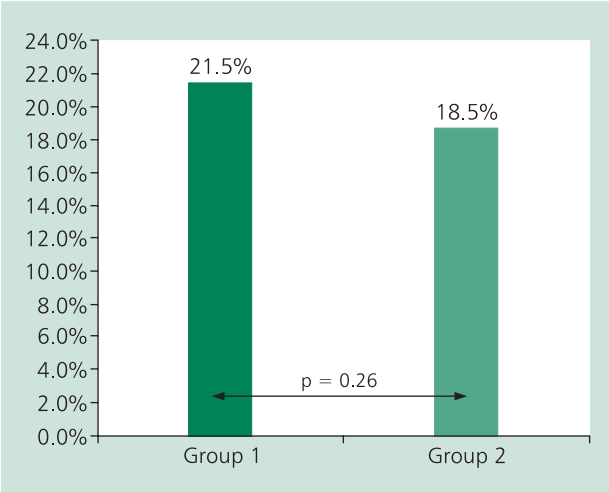

Figure 2. Comparison of in-hospital mortality rates; Group 1 — years 1992–1996, Group 2 — years 2005–2006

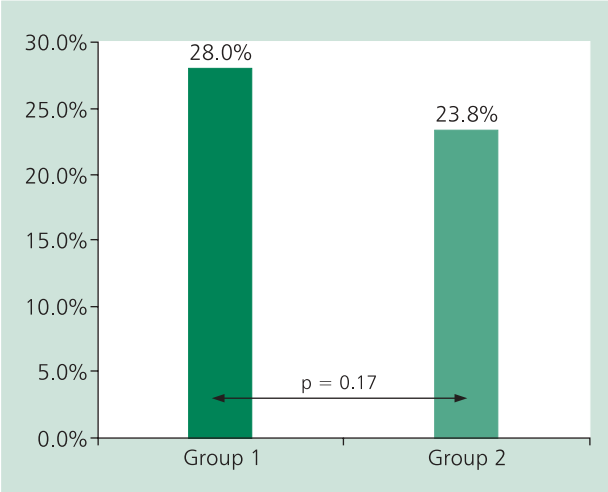

Figure 4. Comparison of 6-month mortality in patients aged 65+; Group 1 — years 1992–1996, Group 2 — years 2005–2006

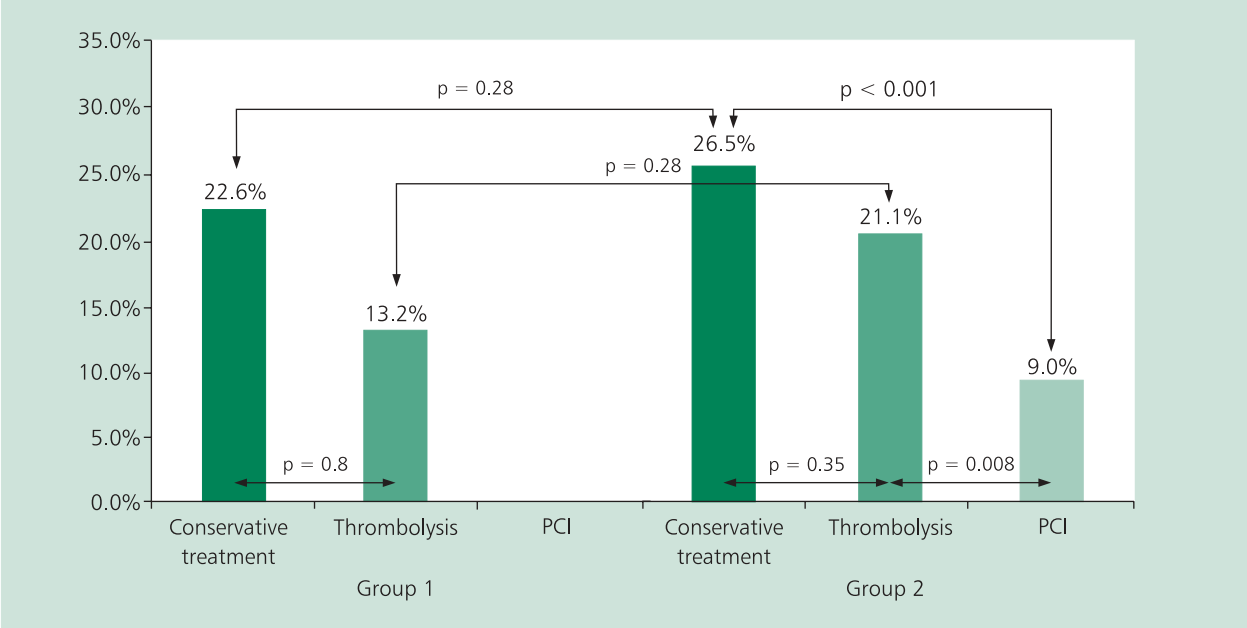

Figure 3. Comparison of in-hospital mortality with relation to treatment strategy; Group 1 — years 1992–1996, Group 2 — years 2005–2006

tors most adversely influencing long-term prognosis (hazard ratio of death at 6 months was 0.35; 95% confidence interval [CI] 0.22–0.58, $p < 0.0001$). The remaining variables such as female gender, MI site, time from pain onset to admission, sudden cardiac death prior to admission and the majority of coronary risk factors did not influence 6-month mortality. Of note, arterial hypertension was related to significantly lower 6-month mortality (Fig. 6).

DISCUSSION

The assessment of therapy advancement in older patients seems very important in view of the reported ageing of the population. According to the WHO prognoses, the proportion of people aged 60 or over will be growing in all European countries — the percentage of older subjects will amount to 25% in these populations (with a sole exception of Ireland) by the year 2030 [5].

An unequivocal definition of advanced age has not been developed. Most authors set the cut-off at the level of 70 years. However, others propose 65 or 75 years instead [6]. In Poland we usually apply the term "older" to people aged 65–75, "elderly" to the ones aged 75–85 and "very elderly" to persons over 85 [7]. In our work patients were divided into older and younger age groups, setting the cut-off at 65 years.

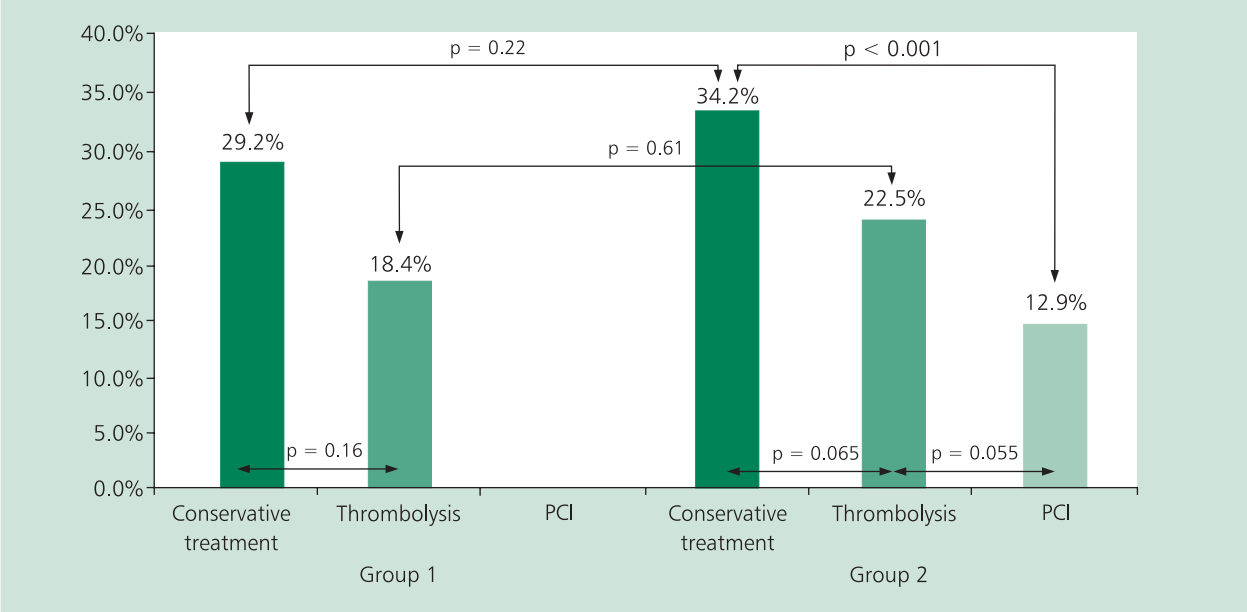

Figure 5. Comparison of 6-month mortality with relation to treatment strategy; Group 1 — years 1992–1996, Group 2 — years 2005–2006 (conservative treatment, thrombolysis, interventional treatment — PCI)

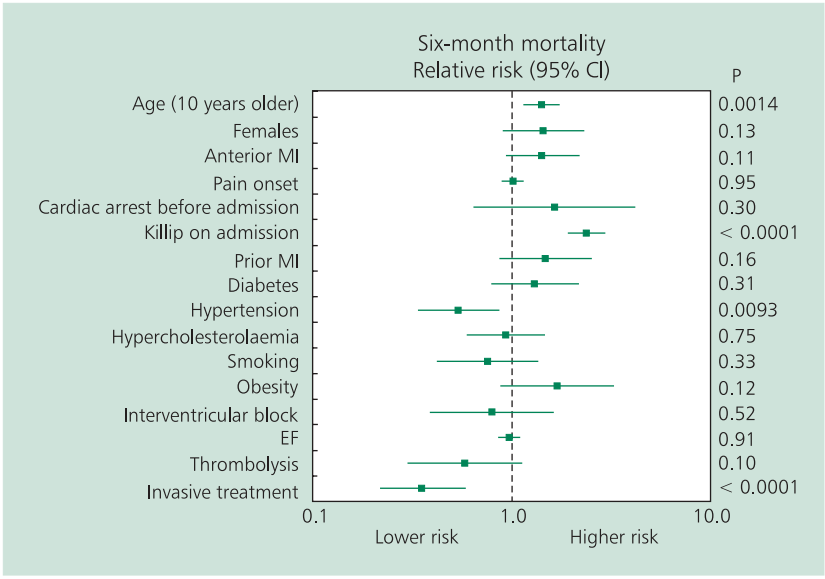

Figure 6. Multivariable analysis of 6-month mortality; MI — myocardial infarction; EF — ejection fraction; CI — confidence interval

The fact that the incidence and severity of CAD increase with age is well established and it holds true for both sexes. The estimated risk of symptomatic CAD, depending on the lifespan, is 1:3 in men and 1:4 in women, the onset of symptoms occurring 10 years earlier in men than in women. Arterial hypertension, diabetes and dyslipidaemia further increase the risk [8].

In the present comparative analysis of two populations of the elderly patients hospitalised for MI, age progression can be observed over 13 years spanning between the two study periods (mean age increased by 2.7 years). The age-related increase of coronary risk factors was also demonstrated: hypertension and dyslipidaemia were significantly more prevalent in elderly patients hospitalised in the more recent study period. As a natural consequence, the degree of myocardial injury is often higher (and EF lower) in these increasingly older patients, burdened with higher coronary risk and many co-morbidities.

In the present study, two "eras" of MI treatment were compared: 1992–1996 were the years of the implementa-

tion of fibrinolysis, whereas the years 2005–2006 represent the time of expanding interventional techniques. Thrombolytic therapy in group 1 was restricted to 11.2% of patients aged 65+ and the only available thrombolytic agent at the time was streptokinase. Undoubtedly, the infrequent administration of fibrinolysis in the elderly was chiefly caused by the apprehension of bleeding complications. Advanced age is a well established major risk factor of intracranial bleeding, but on the other hand, with thrombolytic therapy, the necessity of absolute risk assessment is emphasised. In GISSI-2 study it was estimated that in patients older than 70 years the risk of intracranial bleeding was 2.5 times higher than in patients younger than 60, whereas the absolute risk was higher by as little as 0.3% [9]. Thus, it seems that the risk of the treatment should be counterbalanced by the benefits resulting from early reperfusion. As confirmed by a large meta-analysis (6000 patients), significant survival benefits of thrombolytic therapy were seen in all patients younger than 75 years; in patients older than 75, a non-significant 3% decrease if mortality at 30 days was observed as compared with the non-thrombolysed subset [10].

The results of other studies referring to thrombolytic therapy in this oldest age group (over 75 years) are contradictory. According to a retrospective analysis of a large (ca 8000 patients) STEMI database, even after adjusting for the therapy-related risk, 30-day mortality was higher in patients over 75 than in the group receiving placebo [11]. In another study including long term observation of patients treated with fibrinolysis, a statistically significant 16% mortality reduction in the oldest age group at one year was seen [12]. In the present study only a small, non-significant mortality reduction was noted in patients aged 65+ treated with fibrinolysis in both study periods.

In view of the contradictory results concerning the effectiveness of the thrombolytic therapy and increased risk of bleeding in elderly patients, it is of interest whether interventional treatment offers greater benefits also in the advanced age group. According to the scarce studies relating to this patient population, pPCI resulted in 30% reduction of the 1-month and 1-year mortality as compared with conservative treatment [13]. Despite the lack of randomised studies in the elderly population, data exist justifying the risk of interventional treatment in elderly patients. In a study of 102 STEMI patients aged 75+, 50 patients underwent pPCI and the remaining 52 patients received conservative treatment. Patients in whom pPCI was performed, had recurrent ischaemia in the course of hospitalisation significantly less frequently than patients treated conservatively. Despite that the frequency of composite endpoint was similar in both study groups at discharge and at 30 days, lower 1-year rate of adverse events and lower 1-year mortality were observed in patients treated by pPCI [14]. A large ACS Registry of over 8000 STEMI patients aged 75+ hospitalised in the years 2000–2002 showed that 51% received conservative treatment, 19% received fibrinolysis and 30% underwent pPCI. In-hospital mortality rates were 23.4%, 25.4% and 10.2%, respectively. Total mortality rates at one year were 52.4%, 41.3% and 19.3%, respectively. Based on these findings, high mortality in elderly patients in the course of MI was demonstrated. However, the benefits resulting from interventional treatment in this patient population were unequivocally demonstrated. Also, the multivariable analysis showed that fibrinolysis, despite high in-hospital mortality, occurred beneficial in the long-term observation [15].

Similar conclusions concerning the benefit of interventional treatment in elderly patients can be drawn from a 1-year observation of 127 STEMI patients aged 75+ [16]. Despite significantly higher in-hospital and long-term mortality rates in this age group as compared to younger patients, pPCI in the elderly was an effective method of STEMI treatment and when performed by experienced team, it did not increase complication rate [16].

Considering the paucity of studies carried out in the elderly population, the results of the TRIANA study, seem particularly relevant [17]. The study compared the effectiveness and safety of pPCI in the very elderly. Patients from the oldest age group i.e. aged 75+, admitted with STEMI or new left bundle branch block up to 6 hours from symptom onset, were randomised to PCI or fibrinolysis (tenecteplase and unfractionated heparin). Percutaneous coronary intervention-treated patients derived benefit, as the composite endpoint including death, MI or stroke at 30 days was lower in this subset (25.4 *vs* 18.9%, OR 1.46, 95% CI 0.81–2.61). In the subgroup receiving fibrinolysis, the risks of death (OR 1.31, 95% CI 0.67–2.56, p = 0.43), re-infarction (OR 1.60, 95% CI 0.60–4.25, p = 0.35), and stroke resulting in disability (OR 4.03, 95% CI 0.44–36.5, p = 0.18) were higher. At 12-months, the benefits of PCI seemed to continue (death/re-infarction/disabling stroke: 32.1 *vs* 27.3%, OR 1.26, 95% CI 0.74–2.14). The authors conclude that PCI should be the preferred method of STEMI treatment in elderly patients [17].

Also in our study, the greatest benefits derived from interventional treatment by the elderly were confirmed. This is most probably due to the advancement in interventional techniques as well as to the progress in drug therapy. Beside the new drugs that were introduced (clopidogrel, low molecular weight heparins, statins) special emphasis should be placed on the fact that aspirin, beta-adrenolytics and angiotensin-converting enzyme inhibitors were significantly more frequently administered. Beneficial effects of these agents are now well established in all age groups.

In light of the progress of ACS therapy in the elderly, the absence of difference in total mortality between our two study groups is worrisome. Undoubtedly, one of the reasons is the age advancement over the 13 year period separating the two study periods (mean age increased by 2.7 years). Other reasons include more frequent coronary risk factors and lower EF in patients hospitalised in the more recent period. It should be underlined that these two patient groups, similar in terms of research criteria, are significantly different with

respect to detailed clinical characteristics. Due to the age advancement, the oldest patients from 1992–1996 study group were about the age of the youngest patients from the more recent group. Mean age of the conservatively treated patients (i.e. patients with many co-morbidities, the highest risk profile and the worst prognosis) in group 1 was 73.5 ± 5.6 years. Nearly the same age (73.6 ± 5.1 years) were the patients considered to have the best prognosis, most readily qualified for interventional treatment in the years 2005–2006.

It is well known that advanced age and worse clinical characteristics can cause hesitation when aggressive treatment methods are considered. Hence, in as many as 47.8% of the patients aged 65+ in the period 2005–2006, reperfusion therapy was withheld. It should also be underlined that the decision as to whether interventional treatment should be applied depended solely on clinical characteristics of the patients.

In the current ACS registries, the issue of patient selection for interventional treatment is increasingly recognised. According to such assessment (GRACE score), interventional procedures were most readily performed in lower risk patients (60%), less frequently in intermediate risk patients (54%), and most rarely in patient with the highest risk scores (41%) [18].

In contemporary studies assessing MI treatment in the elderly, paucity of data related to this patient population is being underlined. Clinical practice, however, shows that interventional treatment is applied too rarely, probably also in patients who could presumably benefit from such therapy. It is believed that reliable risk and benefit assessment should be carried out concerning particular age subsets (65–74, 75–84 and 85+). This in turn would lead to better global outcome of the elderly patients.

Limitations of the study

Our comparative analysis is hampered by small numbers of patients in the subgroups treated with fibrinolysis. Another limitation of our study is that full standardisation of the studied groups was not possible due to the progress in diagnostic and interventional techniques over the time that had elapsed between the two study periods (introduction of the new MI definition based on TnT evaluation, advances in echocardiography, changes in pharmacotherapy).

CONCLUSIONS

1. In our study, changes in MI therapy in patients aged 65+, including widespread implementation of reperfusion strategy and modern pharmacotherapy, were demonstrated.
2. The influence of age progression on prognosis of patients admitted for MI was shown to be markedly unfavourable.
3. The worrisome absence of in-hospital and long-term mortality reduction of patients 65+ treated for MI can be attributed to the less favourable initial clinical profile of the recently treated patients (marked age advancement combined with higher risk, i.e. higher proportion of women, patients with hypertension, hyperlipidaemia, prior MI and lower EF).

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Ocena wpływu terapii na rokowanie chorych w wieku powyżej 65 lat leczonych z powodu zawału serca. Analiza porównawcza populacji starszych pacjentów hospitalizowanych w latach 1992–1996 oraz 2005–2006

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Streszczenie

Wstęp: Choroby układu sercowo-naczyniowego są najczęściej rozpoznawanym schorzeniem u osób starszych i stanowią główną przyczynę śmierci kobiet i mężczyzn po 65. roku życia. Przebieg choroby wieńcowej w tej populacji jest cięższy ze względu na częstsze występowanie wielonaczyniowych zmian miażdżycowych i współistnienie dodatkowych przewlekłych schorzeń. Równocześnie jednak postęp terapii ostrych zespołów wieńcowych powinien poprawić rokowanie w zawale serca u osób starszych. W niniejszej pracy oceniono, czy zastosowanie nowoczesnego leczenia zawału serca z uniesieniem odcinka ST (STEMI) przyniosło poprawę rokowania u starszych pacjentów w ciągu kilkunastu lat dzielących badane przedziały czasowe.

Cel: Celem niniejszej pracy było porównanie charakterystyki klinicznej, leczenia i rokowania w przebiegu STEMI u osób > 65. roku życia, hospitalizowanych w latach 1992–1996 oraz 2005–2006.

Metody: Retrospektywnej analizie porównawczej poddano 830 pacjentów w wieku > 65 lat, hospitalizowanych z powodu STEMI, w tym grupę 339 chorych stanowili chorzy leczeni w latach 1992–1996 (populacja obejmująca 38,5% osób ze STEMI z okresu 1992–1996); 491 badanych (55,2% populacji STEMI) hospitalizowano w latach 2005–2006. W obu grupach oceniano charakterystykę kliniczną badanych, przebieg hospitalizacji, rodzaj zastosowanej terapii oraz śmiertelność wewnątrzszpitalną i 6-miesięczną.

Wyniki: Stwierdzono znaczący wzrost liczby chorych w populacji osób w starszym wieku między badanymi przedziałami czasowymi (zwiększenie liczby chorych w wieku > 65 lat z 38,5% w okresie 1992–1996 do 55,2% w latach 2005–2006). W latach 1992–1996 do terapii STEMI dopiero wprowadzano leczenie fibrynolityczne — w badanym okresie fibrynolizę zastosowano u 11,2% chorych, pozostałych pacjentów (88,2%) leczono zachowawczo. Na lata 2005–2006 przypada dynamiczny rozwój technik leczenia inwazyjnego zawału serca. W tym okresie rozkład sposobu terapii przedstawiał się następująco: u 52,2% badanych zastosowano terapię reperfuzyjną, w tym fibrynolizę u 15,1%, przezskórną interwencję wieńcową u 37,1%, a 47,8% chorych było leczonych zachowawczo. Śmiertelność wewnątrzszpitalna wśród osób leczonych zachowawczo wynosiła 22,6% *v.* 13,2% u poddanych fibrynolizie ($p = 0,18$). W latach 2005–2006 najniższą śmiertelność wykazano w grupie chorych leczonych inwazyjnie i efekt ten utrzymywał się po okresie 6-miesięcznej obserwacji (62-procentowa redukcja śmiertelności w porównaniu z terapią zachowawczą; $p < 0,001$).

Wnioski: Terapia inwazyjna przyniosła znaczącą poprawę przeżywalności w grupie pacjentów w wieku > 65 lat, leczonych z powodu STEMI. Brak redukcji śmiertelności wewnątrzszpitalnej i odległej należy przypisywać wyjściowo gorszej charakterystyce klinicznej współcześnie leczonych z powodu STEMI pacjentów > 65. roku życia.

Słowa kluczowe: zawał serca, starszy wiek, strategia reperfuzyjna, poprawa rokowania

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