

Gender does not influence event-free survival in patients with ischaemic heart disease undergoing non-emergency coronary angiography. A single centre analysis

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Abstract

Background: Although gender-related differences in cardiovascular risk in patients with acute coronary syndromes have been investigated several times in Poland, there are few data on the effects of gender on management of patients with stable ischaemic heart disease (IHD). In addition, available data on the prognosis in this condition in men and women are also scarce.

Aim: To assess gender-related differences in treatment and event-free survival in patients with IHD undergoing non-emergency coronary angiography.

Methods: 960 consecutive patients with IHD undergoing coronary angiography were included. Study end points were ascertained over 4.5-year follow-up in 925 patients, of whom 187 were women and 738 were men. The primary end-point consisted of cardiovascular death, myocardial infarction, stroke, cardiac arrest, PCI, CABG or heart transplantation.

Results: Female gender was independently related to higher prescription rate of beta-blockers [odds ratio 1.89 (95% CI 1.08-3.29)], ACE inhibitors [1.47 (1.01-2.16)] and calcium antagonists [1.65 (1.08-2.53)] at the time of coronary angiography. On the other hand, female gender was not independently related to the probability of PCI [1.01 (0.69-1.49)] or CABG [0.91 (0.57-1.48)]. We did not find any gender-related difference in the risk of the primary end point [hazard ratio 0.94 (95% CI 0.67-1.34)] or the three predefined secondary end points.

Conclusions: Female gender was independently related to a higher prescription rate of beta-blockers, ACE inhibitors and calcium antagonists. No gender-related revascularisation was found in respect of myocardial revascularisation. Gender was not an independent factor affecting event-free survival in patients with IHD undergoing non-emergency coronary angiography.

Key words: coronary artery disease, gender, cardiovascular risk, quality of medical care

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Introduction

Ischaemic heart disease (IHD) is the most common single cause of death in developed countries. Numerous studies have explored the existence of different management practices in women and men in the setting of acute coronary syndromes [1-6]. Recently, several studies concerning gender-related differences in stable angina have been published [7, 8]. Some [1-3, 6, 8], but not all [4, 5, 7], of the studies showed that women are investigated

and treated less aggressively than men. Moreover, some analyses indicated that women with IHD have worse prognosis than their male counterparts [2, 3, 6, 8-10]. However, other investigators found no gender-related difference in cardiovascular risk in patients with IHD [4, 5, 7, 11, 12]. It was also suggested that the difference in mortality, although present in univariate analysis, disappears after multiple adjustments [9, 13]. Several analyses showed even higher risk in men [1, 14].

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Although gender-related differences in cardiovascular risk in patients with acute coronary syndromes have been investigated several times in Poland [6, 14-17] there are few data on the effect of gender on management of patients with stable IHD in Poland. Also contemporary information about prognosis in this condition in men and women is similarly scarce. Taking all the above into account the present analysis was designed to assess the gender-related differences in treatment and event-free survival in patients with IHD undergoing non-emergency coronary angiography.

Methods

Study population

Consecutive patients with coronary artery disease (CAD) undergoing non-emergency coronary angiography between 1998 and 2001 and hospitalised in our department were eligible for our study. Physicians followed clinical guidelines when considering coronary angiography [18]. We defined CAD as the presence of at least one significant stenosis (>50%) in the epicardial arteries or myocardial infarction (MI) or revascularisation procedure in the history. We excluded from the analysis all patients with acute MI within a week prior to angiography, patients who received intravenously antianginal or antihypertensive agents within 12 hours or catecholamines within 24 hours prior to coronary angiography, and those with primary pulmonary hypertension. Patients with haemodynamically significant valvular heart disease as assessed during catheterisation or echocardiography and patients with congenital heart disease as well as those with atrial fibrillation/flutter at the time of examination were also excluded.

Baseline data collection

Fasting blood samples were taken before coronary angiography for the analysis of lipids as well as glycaemia and creatinine levels. Diabetes was defined as a fasting blood glucose level of 7.0 mmol/l or more and/or the use of an antidiabetic drug. No differentiation was made between type 1 and type 2 diabetes during analysis due to the low number of patients with type 1 diabetes. Participants with total cholesterol levels ≥ 5.2 mmol/l and/or being prescribed a lipid-lowering drug were considered as having hypercholesterolaemia. Hypertension was defined as high brachial blood pressure (BP) values (SBP ≥ 140 mmHg and/or DBP ≥ 90 mmHg) and/or prescription of a BP-lowering drug for high BP. Current

smokers were defined as those who had smoked any tobacco in the previous month. Ejection fraction was determined using contrast ventriculography.

Cardiac catheterisation was performed according to a standard technique. Optimal views of the arteries from all technically suitable angiograms were analysed. The absolute values for the minimal lumen diameter and the reference lumen diameter were measured at end-diastole. Coronary angiograms were scored according to the number of diseased arteries. The three major coronary vessels (the left anterior descending artery, the circumflex artery, and the right coronary artery) and their branches were evaluated for the extent of coronary atherosclerosis. A diseased artery was defined as >50% stenosis of at least one of its segments. Significant left main artery stenosis was coded as two-vessel disease.

All cardiovascular drugs taken within 24 hours prior to catheterisation were analysed. The following medication classes were considered: antiplatelets, beta-blockers, ACE inhibitors, calcium antagonists, diuretics, nitrates, statins, fibrates, digitalis, oral hypoglycaemics and insulin.

Study end points

Study end points were assessed over a 4.5-year follow-up period. The primary end point was defined as cardiovascular death, non-fatal MI, non-fatal stroke, non-fatal cardiac arrest, percutaneous coronary intervention (PCI), coronary artery bypass grafting (CABG) or heart transplantation. Three secondary end points were defined as follows: (I) cardiovascular death, non-fatal MI or non-fatal stroke; (II) cardiovascular death, non-fatal MI, PCI or CABG; (III) cardiovascular death.

All cardiovascular events were coded according to ICD-10. Death was considered as cardiovascular if it was due to MI (code I21), heart failure (code I50), cerebrovascular disease (codes I60-I64 and I67-I69) or other cardiovascular causes (codes I00-I99). Cardiovascular events which occurred within 24 hours after coronary angiography (stroke in one patient, ventricular fibrillation in two patients and sustained ventricular tachycardia in two patients) were not included in the present analysis as they were considered as procedure-related. If myocardial revascularisation procedures (staged PCI or CABG) were performed or planned at the time of coronary angiography they were not considered as end points.

Statistical analysis

Categorical variables are reported as percentages and continuous variables as means \pm standard

deviation. Student's t-test was used for comparisons of variables with a normal distribution. In the other cases Mann-Whitney U test was used. A two-tailed p value of less than 0.05 was considered to indicate statistical significance.

Multivariate logistic analysis was used to assess the influence of gender on the probability of being prescribed a cardiovascular drug. All variables from Table I with a p <0.05 were included in the statistical model. Similarly, multivariate logistic analysis was used to determine the effect of gender on the frequency of PCI and CABG. All variables from Tables I and II with a p <0.05 were included in the model in this part of the analysis.

Kaplan-Meier curves and log-rank test were used to determine the gender – event-free survival relationship in univariate analysis. Cox's proportional hazards models were used to determine the independent effects of gender on the occurrence of primary and secondary end points in multivariate analysis. In order to compare the prognostic significance of gender we included all variables from Tables I and II with a p <0.05. All data were analysed

using the STATISTICA 6.0 software (StatSoft, Inc., Tulsa, USA). The institutional ethics committee approved the protocol of the study.

Results

The study group consisted of 960 patients undergoing non-emergency coronary angiography. Study end points were ascertained for 925 patients. Furthermore, only the cause and date of death were obtained for 3 participants, and only the date of death was obtained for one patient. Thirty-one (3.2%) patients were lost to follow-up. Data from 928 (96.7%) cases were analysed when cardiovascular death was taken into account and 925 (96.4%) patients were included in the analysis when the other end points were considered.

We examined a possible bias in the formation of the analysed population by comparing it with respect to age, gender, risk factors and heart failure as well as mean value of ejection fraction with the data of the population consisting of 31 patients for whom we had no follow-up information and one person with only the date of death known. These comparisons showed no

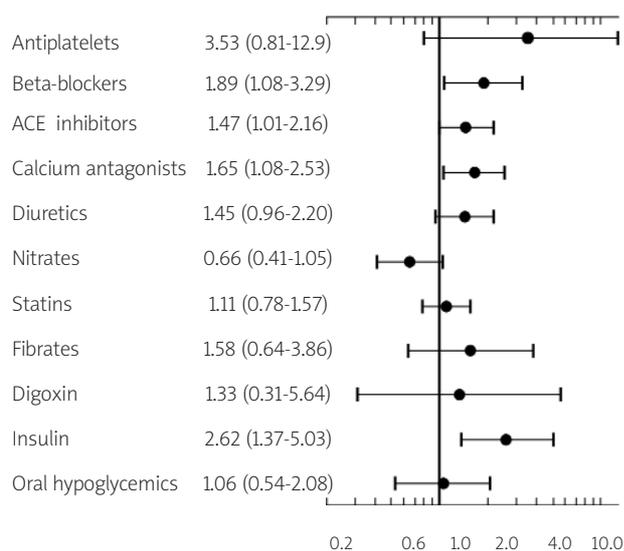
Table I. Characteristics of the analysed population (N=928)

Variable	Men (N=740)	Women (N=188)	p
Age (years)	57.5±10.0	60.6±9.2	<0.001
Smoking			
previous	438 (59.2%)	54 (28.7%)	<0.001
active	101 (13.6%)	12 (6.4%)	<0.01
Hypertension	537 (72.6%)	165 (87.8%)	<0.001
Hypercholesterolemia	619 (83.6%)	161 (85.6%)	NS
Diabetes	107 (14.5%)	40 (21.3%)	<0.05
Heart failure	48 (6.5%)	12 (6.4%)	NS
Previous myocardial infarction	468 (63.2%)	124 (66.0%)	NS
Previous PCI	65 (8.8%)	16 (8.5%)	NS
Previous CABG	11 (1.5%)	1 (0.5%)	NS
Body mass index [kg/m ²]	27.3±3.5	28.0±4.6	<0.05
Left ventricular ejection fraction [%]	54.4±12.5	56.8±11.6	<0.05
Heart rate (per minute)	65.7±10.7	69.8±13.5	<0.001
Total cholesterol [mmol/l]	5.4±1.1	5.6±1.2	<0.05
HDL cholesterol [mmol/l]	1.2±0.3	1.3±0.3	<0.001
LDL cholesterol [mmol/l]	3.3±1.0	3.4±1.2	NS
Triglycerides [mmol/l]	2.1±1.3	2.0±1.0	NS
Fasting glucose [mmol/l]	5.5±1.4	5.8±2.4	<0.05
Creatinine [µmol/l]	97.5±38.1	89.7±63.5	<0.05

Abbreviations: PCI – percutaneous coronary intervention, CABG – coronary artery bypass grafting

Table II. The rates of drug use (N=928)

Class of drugs	Men (N=740)	Women (N=188)	P
Antiplatelets	720 (97.3%)	186 (98.9%)	NS
Beta-blockers	622 (84.1%)	170 (90.4%)	<0.05
ACE inhibitors	399 (53.9%)	130 (69.1%)	<0.001
Calcium antagonists	99 (13.4%)	46 (24.5%)	<0.001
Diuretics	139 (18.8%)	55 (29.3%)	<0.01
Nitrates	612 (82.7%)	149 (79.3%)	NS
Statins	358 (48.4%)	99 (52.7%)	NS
Fibrates	25 (3.4%)	8 (4.3%)	NS
Digoxin	18 (2.4%)	3 (1.6%)	NS
Insulin	32 (4.3%)	21 (11.1%)	<0.001
Oral hypoglycemics	48 (6.5%)	14 (7.4%)	NS

**Figure 1.** The odds ratios and 95% confidence intervals of being prescribed cardiovascular drug associated with female gender

statistically significant differences with respect to all the above factors.

Among study participants with the follow-up data available 188 (20.3%) were women and 740 (79.7%) men. The mean age was 58.1±9.9 years. Clinical characteristics of the study population are given in Table I. Seventy-two (9.7%) men and 26 (13.8%) women were aged over 70 years (p=NS). Obesity (body mass index ≥30.0 kg/m²) was found in 157 (20.2%) men and 54 (28.8%) women (p <0.05), while 381 (51.5%) men and 95 (50.5%) were overweight (body mass index 25.0-30.0 kg/m²). Thirty-

seven (19.7%) women and 96 (13.0%) men (p <0.05) had suffered from acute coronary syndrome 7-90 days before index coronary angiography.

The frequency of drug use is given in Table II. The effect of gender on the probability of being prescribed cardiovascular drugs after multiple adjustments is shown in Figure 1. Female gender was independently related to a higher prescription rate of beta-blockers, ACE inhibitors, calcium antagonists and insulin.

On the basis of coronary angiography one-vessel IHD was found in 213 (28.8%) men and 59 (31.4%) women (p=NS), two-vessel disease in 212 (28.6%) men and 44 (23.4%) women (p=NS), and three-vessel disease in 282 (38.1%) men and 69 (36.7%) women (p=NS), whereas 33 (4.5%) men and 16 (8.5%) women (p=NS) had no significant atherosclerotic lesion in the coronary tree. Among men with no significant stenosis in the epicardial arteries, 31 (91.9%) had a history of MI and 3 (9.1%) had undergone PCI. Among women with no significant stenosis 15 (93.8%) had suffered from MI and 1 (6.3%) female was after previous PCI.

Out of 707 men and 172 women with significant (> 50%) lesions in the coronary arteries, 258 (36.5%) men and 67 (39.0%) women were treated conservatively (p=NS), 292 (41.3%) men and 67 (39.0%) women underwent PCI (p=NS), and 157 (22.2%) men and 38 (22.1%) women (p=NS) underwent CABG. The effect of gender on the probability of undergoing myocardial revascularisation after multiple adjustments is shown in Figure 2. Gender was not independently related to the frequency of PCI or CABG. Among PCI patients the procedure was not successful in 36 (12.3%) men and 7 (10.4%) women (p=NS), mostly in those with chronic total occlusions. Of those with successful procedure

127 men (49.6%) and 30 (50.0%) women ($p=NS$) underwent stent implantation. No drug-eluting stent was used in the study population.

During a mean follow-up time of 52.8 ± 19.4 months (53.0 ± 19.0 months in men vs. 52.2 ± 21.1 months in women; $p=NS$) 87 deaths (69 in men and 18 in women; $p=NS$) were recorded. The mean follow-up of those who did not die was 55.6 ± 17.0 months (55.6 ± 16.8 months in men vs. 55.7 ± 17.7 months among women; $p=NS$). During the follow-up there were 55 (7.4%) cardiovascular deaths among men and 15 (8.0%) among women ($p=NS$), 73 (9.9%) men and 13 (7.0%) women suffered from MI ($p=NS$), whereas 18 (2.4%) men and 6 (3.2%) women suffered from strokes. Six (3.2%) women and 20 (2.7%) men underwent CABG ($p=NS$) whereas 16 (8.6%) women and 98 (13.3%) men underwent PCI ($p=NS$). Additionally, one non-fatal cardiac arrest occurred in a woman and one man underwent heart transplantation.

Primary end point

The primary end point occurred in 191 (25.9%) men and 44 (23.5%) women (the complication rate was 5.9%/year in men and 5.4%/year in women; $p=NS$). The Kaplan-Meier curves of survival free of the primary end point are shown in Figure 3A. The risk of primary end point occurrence associated with female gender after multivariate adjustments is shown in Figure 4. None of the analyses showed female gender to be an independent predictor of the primary end point. When number of diseased coronary vessels and revascularisation procedures were incorporated into the model, gender again was not independently related to the end point.

Secondary end points

Secondary end point which consisted of cardiovascular death or non-fatal MI or non-fatal stroke occurred in 108 (14.6%) men and 27 (14.4%) women (the complication rate was 3.3%/year in men and 3.3%/year in women; $p=NS$). The Kaplan-Meier curves of survival free of the end point are shown in Figure 3B. The risk of the end point associated with female gender after multivariate adjustments is shown in Figure 4.

The end point which consisted of cardiovascular death, non-fatal MI, PCI or CABG occurred in 179 (24.3%) men and 39 (20.9%) women (the complication rate was 5.5%/year in men and 4.8%/year in women; $p=NS$). The Kaplan-Meier curves of survival free of the end point are shown in Figure 3C. The risk of the end point associated with female gender after multivariate adjustments is shown in Figure 4.

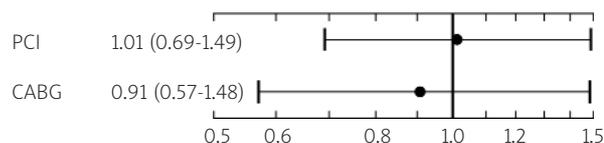


Figure 2. The odds ratios and 95% confidence intervals of the probability of PCI and CABG associated with female gender

Cardiovascular death occurred in 55 (7.4%) men and 15 (8.0%) women (the cardiovascular mortality rate was 1.7%/year in men and 1.8%/year in women; $p=NS$). The Kaplan-Meier curves are shown in Figure 3D. The risk of cardiovascular death associated with female gender after multivariate adjustments is shown in Figure 4. None of the analyses showed female gender to be an independent predictor of any of the secondary end points. When the number of diseased coronary vessels and revascularisation procedures were incorporated into the model, gender again was not independently related to the risk of end point occurrence.

Discussion

The most interesting finding of the present analysis is that women with IHD were more frequently treated with cardiovascular drugs when compared with their male counterparts. In the past numerous studies were published indicating rather lower probability of being prescribed cardiovascular drugs among women with IHD [1, 6, 8, 15]. No major influence of gender was also reported [5, 19]. Our results are in concordance with the data from the Cracovian Program for Secondary Prevention of Ischaemic Heart Disease [20]. Patients hospitalised in six cardiac departments took part in this study. Quite similar differences were found in this population in respect of antiplatelets (82.2% in women vs. 81.3% in men), beta-blockers (64.7% vs. 60.3%) and lipid-lowering agents (40.7% vs. 37.3%) prescription rates [20]. In recent years the problem of IHD management quality in women has been emphasised quite often [21, 22]. In addition, such campaigns as “Women at Heart” in Europe or “Go red for women” in the United States have increased the awareness of health professionals. Many symposia and conferences focusing on the management of women with heart diseases have also been organised in recent years in Poland. Probably our results can be at least partly explained by the effects of the above events.

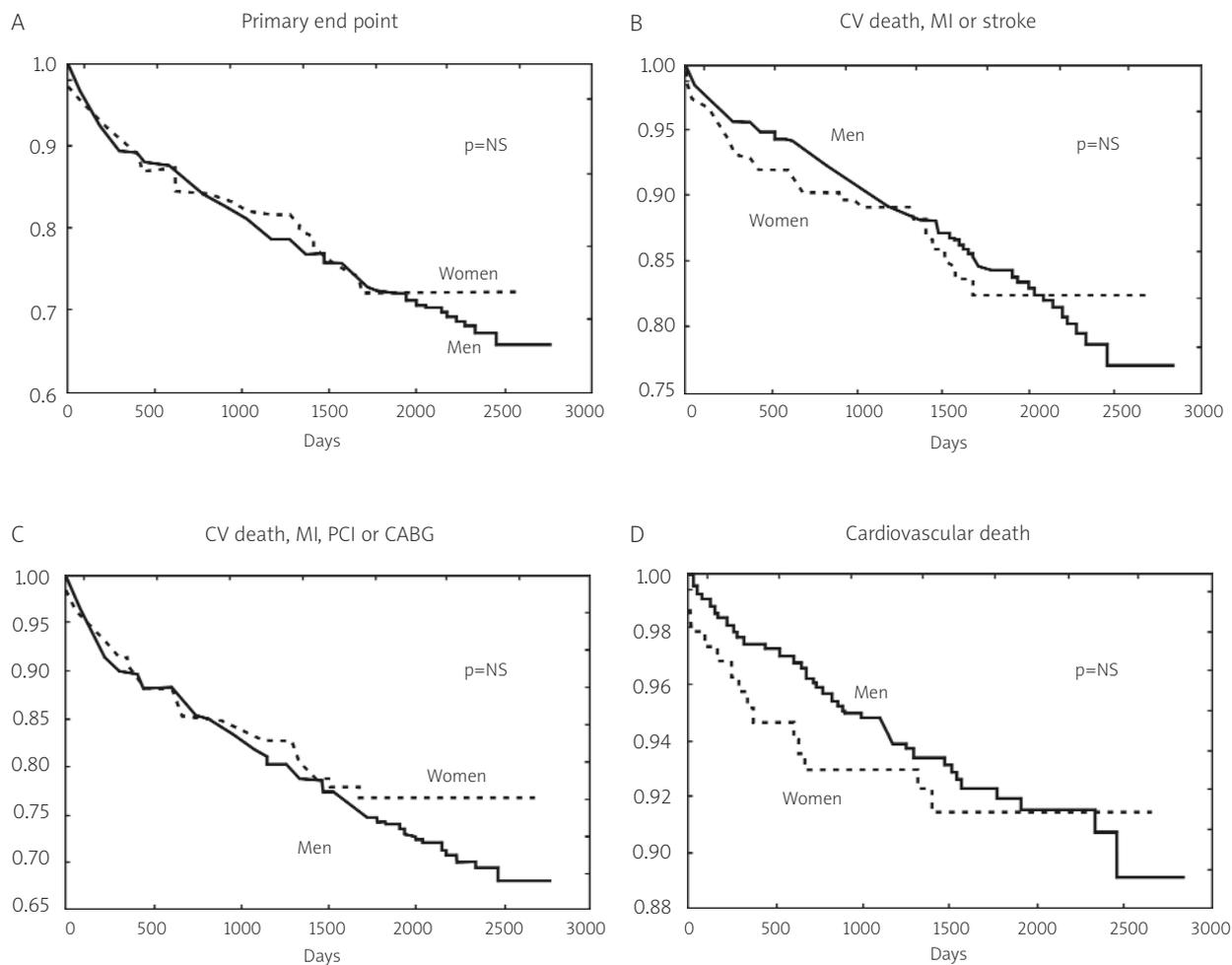


Figure 3. The Kaplan-Meier curves of event-free survival in men and women

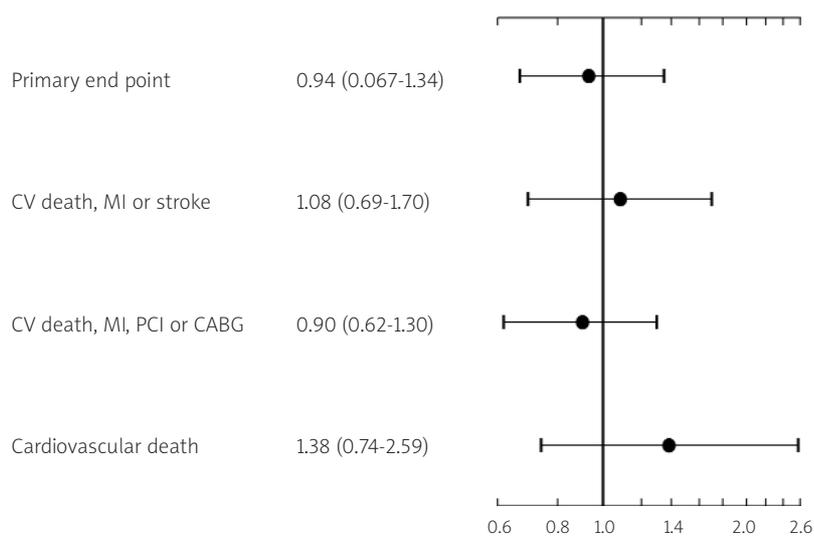


Figure 4. The hazard ratios and 95% confidence intervals of primary and secondary end points associated with female gender

In contrast to several previous reports [2, 6] we did not find any gender-related bias in the proportion of patients undergoing revascularisation procedures. It should be, however, underlined that only patients with confirmed (significant stenosis in coronary angiography and/or MI in the history) IHD were included in the present analysis. The inclusion of the whole patient population undergoing coronary angiography in the analysis would probably result in a significant difference in revascularisation rates between men and women. This is because a much higher proportion of women undergoing coronary angiography are found to have no significant atherosclerosis in the coronary tree and these women are not selected for revascularisation procedures.

As women differ from men in respect of a number of clinical features [3] it is essential to perform an appropriate statistical analysis to draw reasonable conclusions. Ghali et al. identified gender as a predictor of revascularisation after adjustments for clinical variables with the exception of the extent of coronary disease and ventricular function but they failed to show the same association when the extent of coronary atherosclerosis and ventricular function were included in the statistical model [23]. To some extent the same phenomenon was found by Daly et al. [8]. It should be noted that our results agree with a number of studies showing no significant gender-related bias [5, 8]. Among them the analysis of a large set of data collected in the Euro Heart Survey of Stable Angina failed to show an independent relationship between gender and myocardial revascularisation procedures in European regions other than Northern Europe.

Also, we did not confirm the previous findings that women with IHD have higher rate of further cardiovascular complications [2, 3, 6, 8, 15]. First, most of the previous reports included patients with acute coronary syndromes (with or without ST elevation) [2, 3, 6, 15]. Second, the difference in mean age between genders was smaller in our study population than in the previous reports [2, 6, 15]. It is known that age is one of the most important factors influencing the patient's prognosis. Indeed, this could explain the difference between our and previous results. Third, the significantly higher rate of cardiovascular drug prescription among women could decrease the cardiovascular complication rate in women to the level of men. It was also suggested that women analysed in studies which showed higher risk in women with acute coronary syndromes, might not be representative for the whole population of women with acute coronary syndromes [11]. Our results agree with a number of studies showing no major gender-related differences in cardiovascular risk [5, 9, 13, 16, 17, 19].

However, it should be underlined that many investigators found even much greater risk of major cardiovascular events in men [1, 14, 24].

Coronary stenosis >50% was considered as significant. A similar definition was used in international registries [8] as well as in many original contributions [25]. Although the definition of significant stenosis as over 70% would decrease the number of patients qualified as those with CAD it would not change our main results. We repeated all analyses using the definition ">70" and we obtained the same results.

Mean age in the European registries was slightly higher than in the present study group: in the Euro Heart Survey on Coronary Revascularization the mean age was 63 years and in the Euro Heart Survey of Stable Angina – 62 years in women and 60 years in men [8, 26]. Average length of life is several years lower in Poland than in most other European countries. It was also shown that mean age of IHD onset is lower in Poland than in Western Europe countries. Indeed, this could explain the above differences in the mean study population age. It should also be noted that a single-centre analysis from Szczecin showed even lower mean age in women undergoing coronary angiography (57 years) [27]. Our findings also agree with the data from the Cracovian Program for Secondary Prevention of Ischaemic Heart Disease: mean age in women was 58.8 years whereas in men it was 56.4 years [20]. As patients older than 70 years were excluded from the Cracovian Program for Secondary Prevention of Ischaemic Heart Disease this could induce the difference in mean age between the present study and the Cracovian Program populations [20].

The proportion of women in the present study is comparable with the data from the multicentre Cracovian Program for Secondary Prevention of Ischaemic Heart Disease (21-22% of those undergoing coronary revascularisation were women) [28, 29] as well as from a single-centre analysis from Szczecin [27]. As a significant proportion of women in the group analysed by Gil and Pawłowski were found to have no coronary atherosclerosis, the percentage of women among all patients with IHD was probably below 20% [27]. Our data agree also with results from the Euro Heart Survey on Coronary Revascularization [26]. Although the proportion of women in this survey was 24%, after exclusion of those treated for acute coronary syndromes the percentage of women would probably decrease to about 20% [26].

Fourteen percent of our study population had suffered from an acute coronary syndrome 7-90 days

before index coronary angiography. When we limited the analysis to this subgroup the results did not vary significantly (data not shown).

Study limitations

Data from 928 patients undergoing coronary angiography were included in the present analysis. It is possible that the results would differ if we analysed a much bigger group. However, as female gender was related to significantly higher cardiovascular drug prescription rates there is an extremely low probability that the results would be reversed. On the other hand, the gender-survival relationship analysis could indeed produce different results if the analysed population was much greater.

Only patients undergoing non-emergency coronary angiography were included in the study. It is possible that inclusion of non-invasively managed coronary patients would change our results. Moreover, as the present analysis is a single centre study it is possible that the study population was not representative for all men and women with IHD undergoing non-emergency coronary angiography. Indeed, some investigators reported quite different results. Nevertheless, we showed that it is possible to provide at least similar quality of medical care to females and males, and that it can lead to comparable prognosis in women and men.

Conclusions

Female gender was independently related to higher prescription rate of beta-blockers, ACE inhibitors and calcium antagonists. No gender-related bias was found in respect of myocardial revascularisation. Gender was not an independent factor influencing event-free survival in patients with IHD undergoing non-emergency coronary angiography.

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Płeć nie wpływa na częstość wykonywania rewaskularyzacji mięśnia sercowego ani na rokowanie u chorych ze stabilną chorobą niedokrwienną serca

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Streszczenie

Wstęp: Wyniki badań oceniających wpływ płci na rokowanie u pacjentów z ostrymi zespołami wieńcowymi są sprzeczne. Natomiast wyniki badań oceniających wpływ płci na rokowanie u pacjentów ze stabilną chorobą niedokrwienną serca (IHD) są nieliczne i również rozbieżne. W Polsce nie analizowano dotąd wpływu płci na rokowanie w tej grupie chorych. Także wyniki badań dotyczących relacji między płcią a częstością stosowania leków kardiologicznych oraz częstością rewaskularyzacji mięśnia sercowego nie są zgodne.

Cel: Ocena wpływu płci na częstość stosowania leków kardiologicznych, częstość wykonywania zabiegów angioplastyki wieńcowej (PCI) oraz operacji pomostowania aortalno-wieńcowego (CABG), a także rokowanie u osób z IHD poddawanych koronarografii w trybie planowym.

Metodyka: Do badania zakwalifikowano 960 kolejnych pacjentów z IHD poddawanych koronarografii. Chorobę niedokrwienną serca zdefiniowano jako co najmniej jedno zwężenie >50% w tętnicy wieńcowej lub zawał mięśnia sercowego lub rewaskularyzację w wywiadzie. Występowanie powikłań sercowo-naczyniowych oceniono u 925 osób (738 mężczyzn oraz 187 kobiet). Pierwszorzędowy punkt końcowy zdefiniowano jako zgon z przyczyn sercowo-naczyniowych, zawał serca, udar mózgu, zatrzymanie krążenia, PCI, CABG lub transplantację serca.

Wyniki: Kobiety były starsze od mężczyzn (60,6±9,2 lat vs 57,5±10,0 lat, $p < 0,05$). Nadciśnienie tętnicze oraz cukrzyca występowały istotnie częściej u kobiet (odpowiednio 87,7% vs 72,6%, $p < 0,05$ oraz 21,3% vs 14,5%, $p < 0,05$), a mężczyźni częściej palili (13,6% vs 6,4%, $p < 0,05$). Nie było istotnych różnic pod względem częstości występowania hipercholesterolemii (85,6% vs 83,6%), niewydolności serca (6,4% vs 6,5%), zawału serca w wywiadzie (66,0% vs 63,2%), PCI w wywiadzie (8,5% vs 8,8%) ani CABG w wywiadzie (0,5% vs 1,5%). Nie stwierdzono również istotnej różnicy pod względem liczby zwężonych tętnic wieńcowych. Płeć żeńska, po uwzględnieniu zmiennych zakłócających, wiązała się z większą częstością stosowania beta-blokerów [iloraz szans 1,89 (95% CI 1,08–3,29)], inhibitorów enzymu konwertującego [1,47 (1,01–2,16)] oraz blokerów kanału wapniowego [1,65 (1,08–2,53)], nie stwierdzono natomiast istotnego wpływu płci na częstość wykonywania PCI [1,01 (0,69–1,49)] oraz CABG [0,91 (0,57–1,48)]. Średni czas obserwacji wyniósł 55,6±16,8 mies. W okresie obserwacji zmarło 87 osób (69 mężczyzn oraz 18 kobiet), w tym 70 [55 (7,4%) mężczyzn oraz 15 (8,0%) kobiet] z przyczyn sercowo-naczyniowych. Pierwszorzędowy punkt końcowy wystąpił u 25,9% mężczyzn oraz 23,5% kobiet ($p=NS$). W analizie wieloczynnikowej płeć żeńska nie była związana z częstością wystąpienia pierwszorzędowego punktu końcowego [0,94 (0,67–1,34)]. Nie była również istotnie związana z częstością wystąpienia drugorzędowych punktów końcowych: zgonu z przyczyn sercowo-naczyniowych, zawału serca lub udaru mózgu [1,08 (0,69–1,70)]; zgonu z przyczyn sercowo-naczyniowych, zawału serca lub rewaskularyzacji [0,90 (0,62–1,30)]; zgonu z przyczyn sercowo-naczyniowych [1,38 (0,74–2,59)].

Wnioski: Kobiety były istotnie częściej leczone beta-blokerami, inhibitorami enzymu konwertującego oraz antagonistami wapnia. Nie stwierdzono natomiast istotnego wpływu płci na częstość wykonywania rewaskularyzacji mięśnia sercowego ani na rokowanie.

Słowa kluczowe: choroba niedokrwienna serca, płeć, ryzyko sercowo-naczyniowe, jakość opieki medycznej

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