ORIGINAL ARTICLE

Causes of hospitalization and prognosis in patients with cardiovascular diseases

Secular trends in the years 2006–2014 according to the SILesian CARDiovascular (SILCARD) database

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KEY WORDS

cardiovascular diseases, epidemiology, hospitalization, prognosis

ABSTRACT

INTRODUCTION Despite the progress in cardiology in recent years, cardiovascular (CV) diseases remain the main cause of death in European countries. The knowledge concerning the structure of hospital admissions for CV diseases and clinical outcomes is fragmentary.

OBJECTIVES The aim of the study was to analyze the characteristics and outcome of patients with CV disease, hospitalized between 2006 and 2014 and included in the Silesian Cardiovascular Database (SILCARD) covering a population of 4.6 million inhabitants.

PATIENTS AND METHODS SILCARD is based on the data from the Regional Department of the National Health Fund in Poland. The enrollment criteria were any hospitalization at a department of cardiology, cardiac surgery, diabetology or vascular surgery and hospitalization with a cardiovascular diagnosis at a department of internal medicine or intensive care. The data come from 310 hospital departments and 1863 outpatient clinics, and contain information on 487 518 patients and 956 634 hospitalizations.

RESULTS Heart failure (20%) and stable coronary artery disease (18.5%) were the most frequent primary causes of hospitalization. The number of hospitalizations due to heart failure, aortic stenosis, and pulmonary embolism significantly increased. The highest 12-month mortality was reported in patients with heart failure and pulmonary embolism (>30%). A decrease in 12-month mortality in patients with heart failure, stable coronary artery disease, myocardial infarction, and atrial fibrillation was noted, although for some disease entities, it remained relatively high.

CONCLUSIONS Between the years 2006 and 2014, in-hospital and 12-month mortality showed a trend for decline in many disease entities, with considerable space for prognostic improvement.

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INTRODUCTION Despite the progress in cardiology in recent years, cardiovascular (CV) diseases continue to be the main cause of death in European countries.[1] A high case fatality rate in Poland is observed in people at working age and still remains higher than that in the majority of the European Union countries. Ischemic heart disease and its complications are the major causes of death. The knowledge concerning other CV diseases, which is equally important for

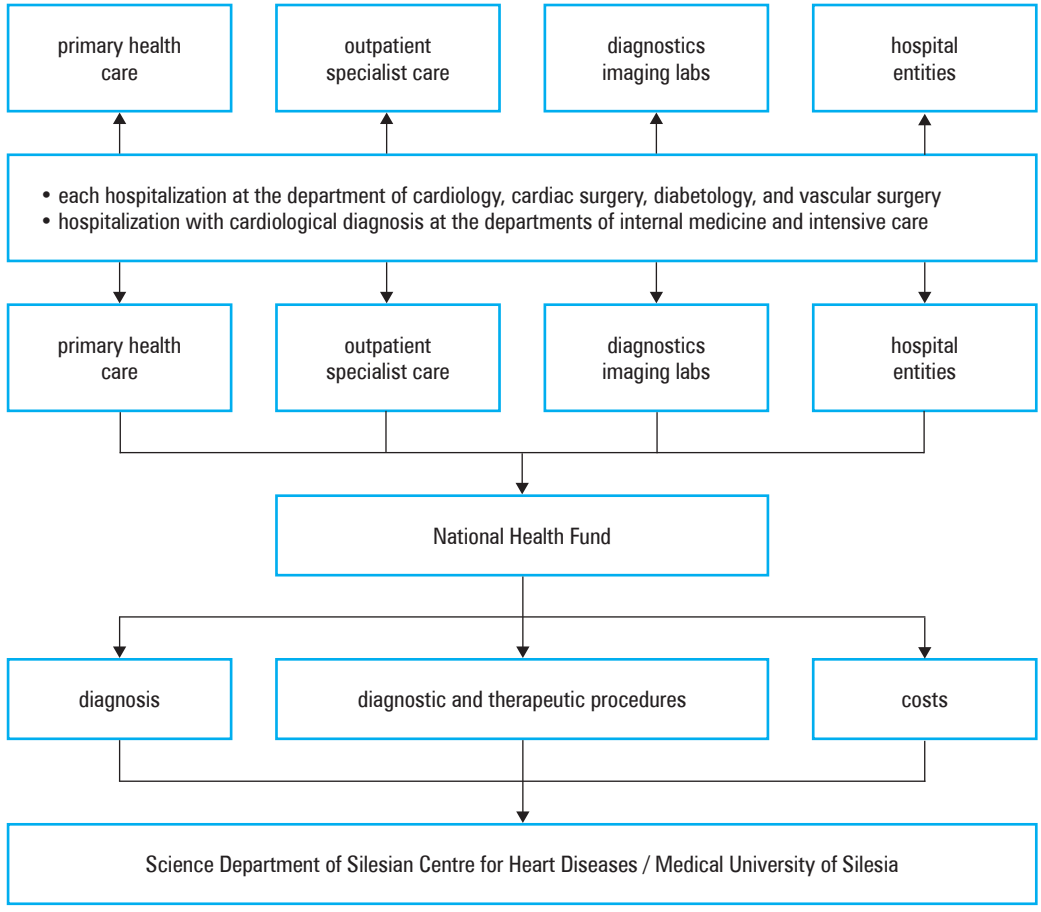

FIGURE 1 Diagram showing data flow

obtaining a complete epidemiological picture, is fragmentary.[2]

There are many causes of excess mortality in the groups of young and middle-aged patients in Poland. However, in order to gain full knowledge on this topic, it is necessary to collect reliable information on the prevalence of individual diseases, methods of treatment, and prognosis. The incomplete data published to date come from single-center, multi-center, or national registries and randomized trials. Such data do not allow us to look at the problem from the population perspective, as they concern only selected patient groups and treatment methods. The analyses are usually focused on a single disease entity, and data concerning long-term prognosis are often lacking. The available data do not allow for a wide and complex assessment of the extent of the problem. Therefore, strategic planning is difficult. It should be noted that the health status of the society is monitored by numerous national institutions. In Poland, the National Health Fund is in possession of an extensive database. It is currently the only public payer that requires reporting on all important disease entities and procedures according to the ICD-10 and ICD-9 classifications. Previously, the National Health Fund data were used to analyze the effects of the management of myocardial infarction.[3] Interestingly, there are only a few complete elaborations on the entire spectrum of CV diseases in the world literature.[4,5]

The main reasons for creating the Silesian Cardiovascular Database (SILCARD) were as follows: 1) collection and analysis of all epidemiological data as well as diagnostic and therapeutic procedures in patients with CV diseases, and 2) assessment of short- and long-term prognosis. The data come from hospital departments and outpatient clinics and cover the period from 2006 to 2014. They contain information on cardiovascular hospitalizations and outpatient visits. The analysis covers the entire population of the Silesian region inhabited by 4.6 million people.

The aim of this study was to present a cross-section analysis of patients hospitalized with major CV diseases.

PATIENTS AND METHODS

The SILCARD database was based on the agreement between Silesian Centre for Heart Diseases in Zabrze and the Regional Department of National Health Fund in Katowice to conduct a comprehensive analysis of patients with CV diseases in the Silesian Province.

The inclusion criteria were as follows: each hospitalization at a department of cardiology, cardiac surgery, diabetology, or vascular surgery and hospitalization with a CV diagnosis at a department of internal medicine or intensive care. The exclusion criteria were hospitalizations of patients living outside the Silesian Province and patients younger than 18 years on admission.

All hospitalizations fulfilling the enrollment criteria in the years from 2006 to 2014 were included in the registry. The initial hospitalization

TABLE 1 The ICD classification codes assigned to individual cardiovascular diseases

cardiovascular diseases	ICD 10
heart failure	I50, I51.5, I51.7, J81, R57, I42, I43
stable coronary artery disease	I25, I20.1, I20.8, I20.9
unstable angina	I20.0, I24.0, I24.8, I24.9
myocardial infarction	I21, I22
atrial fibrillation	I48
arterial hypertension	I10, I11, I12, I13, I15
pulmonary embolism	I26
infective endocarditis	I33, I38, I39
grown-up congenital heart disease	Q20-Q28
aortic stenosis	I06.0, I06.2, I35.0, I35.2
valvular heart diseases without aortic stenosis	I05, I06.1, I06.8, I06.9, I07, I08, I34, I35.1, I35.8, I35.9, I36, I37
arrhythmias and conduction disturbances without atrial fibrillation	I44, I45, I46, I47, I49
diseases of aorta, peripheral arteries, and veins	I60-I74, I77-I89
other cardiovascular diseases	I01, I02.0, I09, I23, I24.1, I27, I28, I30-I32, I40, I41, I51, I52, I95, I97.0, I97.1, I97.8, I97.9, I98, I99

was defined as an admission for CV causes, including a potential transfer to another department or hospital. This hospitalization constituted the baseline for follow-up. If the time between hospital discharge and the following admission due to the diagnosed CV disease was shorter than 1 day, both hospitalizations were treated as one.

All data were anonymized. Matching information concerning the individual patient was possible through the hospital register number and encoded national personal identification number (PESEL). Data analysis was conducted at the Science Department of Silesian Centre for Heart Diseases and the Department of Biostatistics of the Medical University of Silesia, Katowice, Poland, according to regulations (Security Policy as of September 1, 2015). The individuals involved in data collection and workup signed a confidentiality clause. Data flow is shown in FIGURE 1.

The analyses were conducted as follows: 1) according to the first hospitalization of the patient, depending on primary and/or concomitant diagnosis (ICD-10), where each next hospitalization was analyzed as an event (analysis of first-time hospitalizations); 2) according to the first hospitalization of the patient depending on primary and/or concomitant diagnosis (ICD-10), where all hospitalizations in a given year were included but not counted as an event (analysis of all hospitalizations); 3) diagnostic and therapeutic procedures were analyzed according to the ICD-9, presenting all of them together or attributing to each of the patients with a given disease entity.

The reported data come from 310 hospital departments and 1863 outpatient clinics. They contain information on 487 518 patients and 956 634 cardiovascular hospitalizations.

In this study, we analyzed the number and location of hospitalizations, distribution of disease entities, and prognosis up to 12 months. The ICD classification codes assigned to the individual disease entities are presented in TABLE 1.

Statistical analysis Mortality and repeated hospitalizations in a 12-month follow-up were analyzed according to the first hospitalization of the given patient. Other calculations were performed according to the analysis of all hospitalizations. Descriptive statistics was applied. Compilations were generated directly from the Oracle database using the SQL Developer tool. An Excel spreadsheet was used for graphic data development. Continuous variables were compared using the 1-way analysis of variance. The differences in the number of patients and mortality over the years were verified using the χ^2 test for trend in proportions. Mortality data were adjusted for age (per 10-year groups) and sex using the entire SILCARD population as a reference. A P value of less than 0.05 was considered statistically significant.

RESULTS The total number of CV hospital admissions remained constant over the analyzed period (105 794 in the year 2006, and 104 836 in 2014). There was a significant shift from hospitalizations at internal medicine departments to those at cardiology departments. In 2006, 63 837 patients (60.3%) were admitted to general medical departments and 40 306 (38.1%) to cardiology departments, while in 2014, the proportions reverted (47 513 [45.3%] and 53 364 [50.9%], respectively; P for trend <0.001). The mean age of patients steadily increased over time, both for men and women (from 62.7 ±13.5 to 66.3 ±12.8 and from 67.9 ±13.9 to 71.2 ±13.4 years, respectively; P for trend <0.001). The proportion of women decreased over time (49.9% to 47.2%; P for trend <0.001) (FIGURE 2).

The average length of hospital stay decreased from 9.2 ±8.1 to 7.5 ±6.8 days (P for trend <0.001). Similarly, the overall readmission rate dropped from 28.1% in 2006 to 24.6% in 2014 (P for trend <0.001). In-hospital and 12-month mortality in the entire group of patients with CV diseases was 6.7% and 14.5%, respectively, with no important change over the 9-year period (FIGURE 3). TABLE 2 presents the distribution of CV hospitalizations according to primary diagnosis. The most frequent causes of hospitalizations were heart failure (20%) and stable coronary artery disease (CAD; 18.5%). Over the years, the number of hospitalizations due to heart failure, aortic stenosis, and pulmonary embolism significantly increased, whereas the number of hospitalizations caused by arterial hypertension decreased. Standardized in-hospital and 12-month mortality for patients with different CV diagnoses is shown in TABLES 3 and 4. The highest 12-month mortality was noted in patients with heart failure and pulmonary embolism (>30%). Except for infective endocarditis, aortic stenosis, arrhythmias and conduction

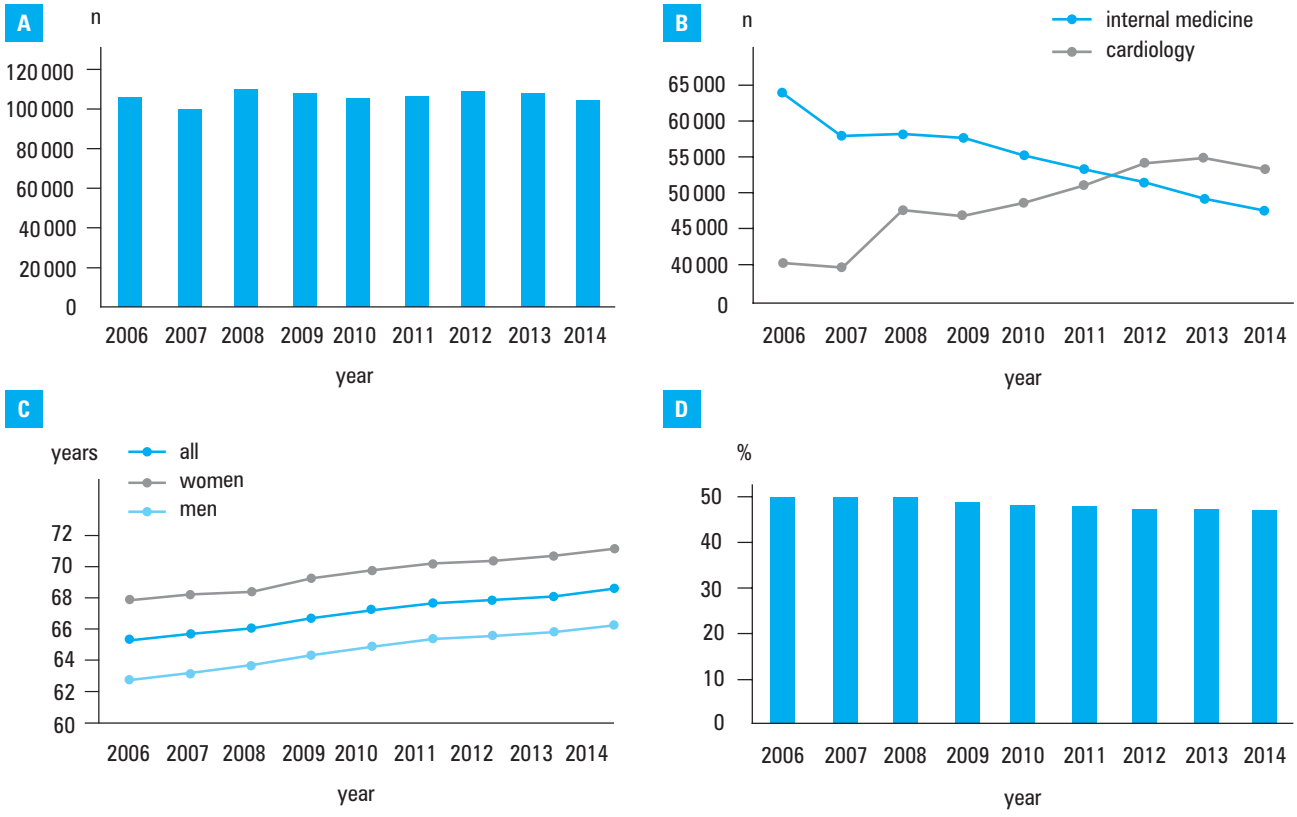

FIGURE 2 Characteristics of all cardiovascular hospitalizations: **A** – total number of cardiovascular hospitalizations; **B** – department of hospitalization; **C** – mean patient age; **D** – proportion of female patients; *P* for trend for **B–D** <0.001)

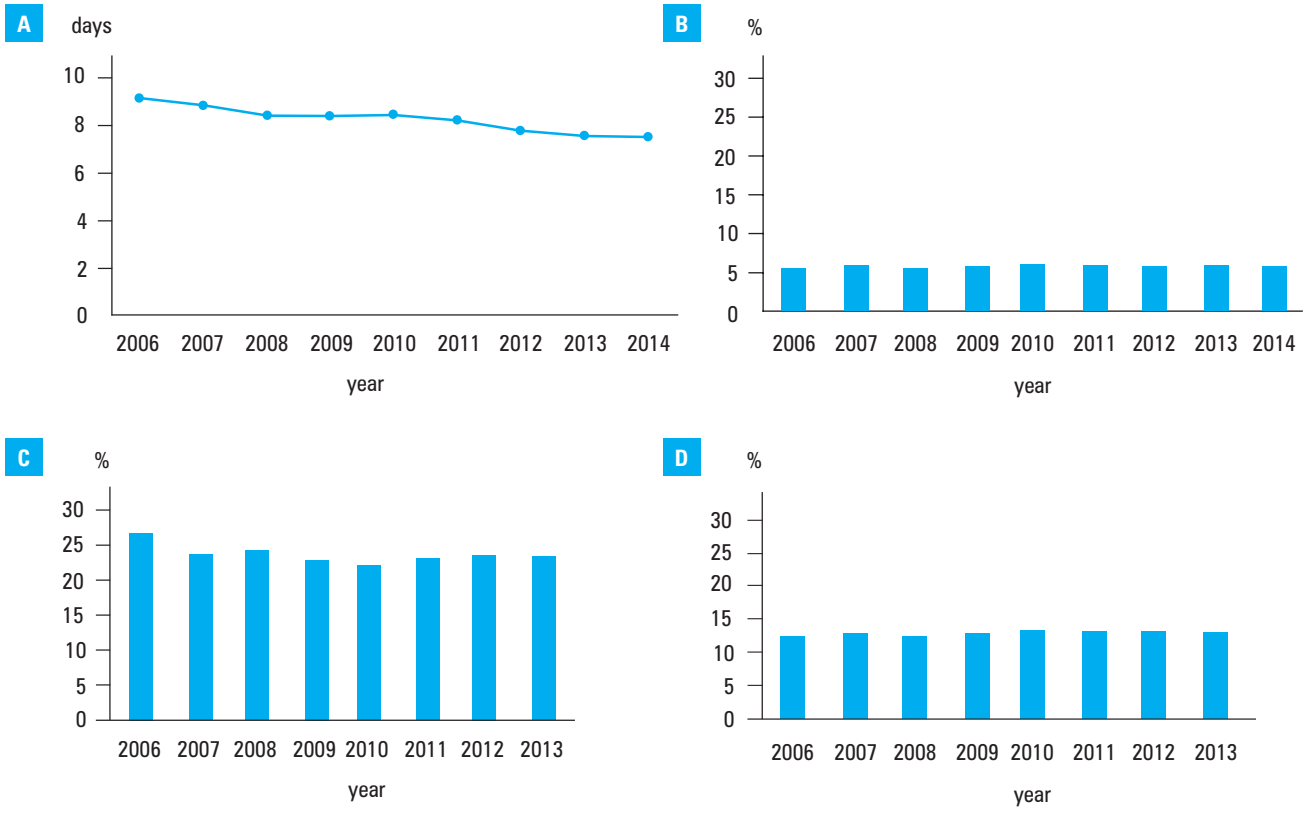

FIGURE 3 Prognosis for all cardiovascular hospitalizations: **A** – length of hospital stay; **B** – in-hospital mortality; **C** – rehospitalization in 12-month follow-up; **D** – 12-month mortality; (*P* for trend for: **A** and C <0.001) (**A**, analysis for all hospitalizations; **B–D**, analysis of first-time hospitalizations)

TABLE 2 Distribution of cardiovascular hospitalisations

Cardiovascular diseases, n (%)	2006	2007	2008	2009	2010	2011	2012	2013	2014
heart failure	17 318 (16.4)	17 204 (17.1)	20 705 (18.8)	22 592 (21.1)	22 525 (21.3)	23 717 (22.3)	22 971 (21.1)	22 069 (20.5)	22 214 (21.2)
stable coronary heart disease	19 839 (18.8)	17 220 (17.2)	21 105 (19.2)	20 933 (19.6)	19 615 (18.6)	19 821 (18.7)	20 737 (19.0)	19 937 (18.5)	17 909 (17.1)
unstable angina	9344 (8.8)	8497 (8.5)	7743 (7.1)	7565 (7.1)	7586 (7.2)	7672 (7.2)	9089 (8.3)	9578 (8.9)	10 071 (9.6)
myocardial infarction	9766 (9.2)	10 347 (10.3)	10 617 (9.7)	10 408 (9.7)	10 686 (10.1)	10 746 (10.1)	11 045 (10.1)	10 367 (9.6)	9619 (9.2)
atrial fibrillation	8760 (8.3)	8433 (8.4)	8383 (7.6)	7099 (6.6)	7101 (6.7)	6918 (6.5)	6955 (6.4)	7031 (6.5)	6803 (6.5)
arterial hypertension	18 187 (17.2)	15 855 (15.8)	15 173 (13.8)	12 109 (11.3)	11 284 (10.7)	9926 (9.3)	9476 (8.7)	8773 (8.1)	7971 (7.6)
pulmonary embolism	532 (0.5)	614 (0.6)	721 (0.7)	939 (0.9)	982 (0.9)	970 (0.9)	1016 (0.9)	1 117 (1.0)	1295 (1.2)
infective endocarditis	106 (0.1)	101 (0.1)	129 (0.1)	132 (0.1)	126 (0.1)	149 (0.1)	128 (0.1)	142 (0.1)	147 (0.1)
grown-up congenital heart disease	379 (0.4)	329 (0.3)	530 (0.5)	442 (0.4)	500 (0.5)	463 (0.4)	572 (0.5)	533 (0.5)	425 (0.4)
aortic stenosis	664 (0.6)	709 (0.7)	1028 (0.9)	1415 (1.3)	1611 (1.5)	1744 (1.6)	1836 (1.7)	1903 (1.8)	1919 (1.8)
valvular heart diseases without aortic stenosis	1259 (1.2)	1266 (1.3)	2684 (2.4)	4 413 (4.1)	5103 (4.8)	5572 (5.3)	5434 (5.0)	5660 (5.3)	5671 (5.4)
arrhythmias and conduction disturbances without atrial fibrillation	8377 (7.9)	8015 (8.0)	8378 (7.6)	7 015 (6.6)	6843 (6.5)	6876 (6.5)	7057 (6.5)	7326 (6.8)	6778 (6.5)
diseases of the aorta, peripheral arteries, and veins	9890 (9.4)	10 450 (10.4)	11 028 (10.0)	10 060 (9.4)	9630 (9.1)	9674 (9.1)	10 760 (9.9)	11 696 (10.8)	12 353 (11.8)
other cardiovascular diseases	1373 (1.3)	1354 (1.4)	1675 (1.5)	1963 (1.8)	2033 (1.9)	1976 (1.9)	1840 (1.7)	1737 (1.6)	1661 (1.6)

disturbances without atrial fibrillation, as well as diseases of the aorta, peripheral arteries, and veins, a uniform decrease of 12-month mortality was observed. No significant improvement was observed in patients with pulmonary embolism over time. Despite a significant drop in 12-month all-cause death rate, mortality remained unacceptably high in patients with heart failure, stable CAD, myocardial infarction, and atrial fibrillation. Again, in the 12-month follow-up, no improvement was seen in patients with pulmonary embolism, infective endocarditis, arrhythmias other than atrial fibrillation, or aortic and peripheral vascular diseases.

DISCUSSION CV diseases continue to be the main cause of death and disability in Poland. It is estimated that they cause about 50% of all deaths.[6] Despite the improvement observed in recent years, the standardized death rate due to CV causes still remains higher compared with that in most European Union countries, and it is expected to increase in the near future.[7,8] In order to develop preventive actions in the fastest and most comprehensive way, reliable data showing the trends and dynamics of changes in recent years are needed.

It is particularly important to collect such data because their analysis allows assessment of the impact of guideline implementation on the outcome. In addition, while randomized controlled trials form the basis for international guidelines, patients included in the trials may differ from those seen in daily practice. Therefore, registries that contain more representative groups of patients allow a more comprehensive assessment of patient management and outcome. For these reasons, the European Society of Cardiology and the American College of Cardiology/American Heart Association have been compiling registries of most CV diseases (Euro Heart Survey and American College of Cardiology-National Cardiovascular Data Registry).[4,5]

Our data enable presentation of secular trends in CV hospitalizations and outcome over the 9-year period from 2006 to 2014. Our approach is similar to that of Modig et al.[9] They also used the information reported to the national insurer according to the ICD-10 and ICD-9 classifications. Similarly, they presented trends for the prevalence of CV diseases and related fatality rates over the years, depending on age and sex.

Our study showed that the total number of hospitalizations due to CV reasons did not significantly increase over the years. Although the mean age of hospitalized patients had increased by 4 years, in-hospital and 12-month mortality rates remained stable. It should be noted that since 2011 the number of patients with CV diseases hospitalized in specialist cardiology departments has been higher than that in internal medicine departments. Importantly, the average length of hospital stay over the years was reduced by more than 1 day. This trend has been observed in recent

TABLE 3 Standardized (adjusted for age and sex) in-hospital mortality from cardiovascular diseases in the years 2006–2014

Cardiovascular diseases, %	2006	2007	2008	2009	2010	2011	2012	2013	2014	*P* value
heart failure	17.4	18.6	16.6	15.2	15.2	13.6	14.1	14.9	13.4	<0.001
stable coronary artery disease	2.6	2.8	2.2	1.7	1.5	1.5	1.7	1.4	1.5	<0.001
unstable angina	1.6	2.0	1.9	1.8	1.6	1.7	1.6	1.3	1.3	<0.001
myocardial infarction	11.8	11.3	11.0	9.5	9.1	9.0	9.6	9.3		<0.001
atrial fibrillation	1.2	1.4	1.2	1.2	0.8	1.1	0.5	0.6	0.7	<0.001
arterial hypertension	0.6	0.7	0.5	0.5	0.7	0.5	0.4	0.4	0.5	<0.001
pulmonary embolism	21.9	21.8	20.3	19.0	18.7	19.0	18.7	14.4	16.0	<0.001
infective endocarditis	5.0	25.2	15.4	16.6	17.3	20.2	15.9	12.2	21.2	0.304
grown-up congenital heart disease	0.4	1.5	1.9	0.3	0.2	0.0	0.3	0.0	0.6	0.010
aortic stenosis	6.9	5.6	3.3	3.4	3.1	2.8	3.2	3.2	2.0	<0.001
valvular heart diseases without aortic stenosis	5.5	6.2	2.6	2.2	2.2	2.0	2.3	1.9	1.8	<0.001
arrhythmias and conduction disturbances without atrial fibrillation	6.1	7.3	8.4	11.0	10.3	10.9	11.7	11.0	11.8	<0.001
diseases of the aorta, peripheral arteries, and veins	15.2	16.9	13.8	14.8	15.5	15.0	14.3	13.8	12.7	<0.001
other cardiovascular diseases	5.8	7.3	4.5	4.5	5.5	5.2	5.2	6.9	4.2	0.198

years for most CV diseases.[3,10] This is likely due to the implementation of more precise diagnostic methods and more effective treatments, including invasive interventions.

It should be noted that heart failure, atrial fibrillation, coronary heart disease, and acute coronary syndromes constitute over two-thirds of all admissions. It is not surprising that patients with heart failure, who have a high hospitalization rate and a 12-month mortality of over 30%, constitute the most challenging group. In the present analysis, the number of hospitalizations with primary diagnosis of heart failure increased up to 2010 and has remained stable since then. Similar trends were described in the registries in Sweden, Germany, and the United States.[11-13] This tendency was present despite the increasing prevalence of heart failure caused by population aging and more effective treatment of acute myocardial infarction, resulting in survival of patients with left ventricular dysfunction. No increase in the hospitalization rate may be due to a shift of care to outpatient clinics. Still, the mortality rate in this group remains high although large discrepancies can be seen between different analyses. This may result from different enrollment criteria, age distribution, and the level of adherence to guideline-based therapies (including, for example, implantable electrical devices).[14-17] Thus, when analyzing treatment effects and prognosis, numerous aspects such as the heterogeneity of populations, management options, logistic solutions, or financial potential should be taken into consideration.

Atrial fibrillation is the most frequent cause of arrhythmia. It is known from the Framingham study that its prevalence has increased over the years.[18] In the United States, the hospitalization rate increased between 2000 and 2010 by 23%.[19] In our study, the hospitalization rate due to atrial fibrillation was the highest in the years from 2006 to 2008 and then remained stable for the subsequent years. Most probably, however, the prevalence of atrial fibrillation will continue to increase with population aging.[20] In addition, Qvist et al[21] have suggested that despite the decrease in the number of hospitalizations due to the arrhythmia itself, the number of its complications, such as heart failure or stroke, is actually increasing.

In contrast to atrial fibrillation, the hospitalization rate of patients diagnosed with any arrhythmia other than atrial fibrillation has increased over the years. In addition, mortality showed a significant increase in this very heterogeneous group, which mostly includes ventricular arrhythmias. Ventricular arrhythmias, induced by ischemia and/or heart failure, are likely responsible for both hospitalizations and increased death rate.

In the present study, the number of hospitalizations caused by stable CAD remained at a comparable level, with a slight downward trend in recent years and a decreasing 12-month fatality rate. A trend concerning the frequency of hospitalizations due to stable CAD that was demonstrated in our study is comparable to the situation in Europe.[1] It is probably the effect of improvement in primary prevention. The lower death rate observed in our study corresponds to the reports of other authors.[22,23] The prognostic improvement most probably results from the significant progress in pharmacological treatment

TABLE 4 Standardized (adjusted for age and sex) 12-month mortality from cardiovascular diseases in the years 2006–2013

Cardiovascular diseases, %	2006	2007	2008	2009	2010	2011	2012	2013	*P* value
heart failure	36.3	36.3	34.2	31.9	32.9	30.4	31.3	31.1	<0.001
stable coronary artery disease	9.4	9.1	7.8	6.5	6.8	6.1	6.4	5.6	<0.001
unstable angina	7.8	8.2	7.3	7.1	6.8	6.3	6.8	5.3	<0.001
myocardial infarction	21.5	20.8	20.4	18.5	18.3	17.4	18.0	17.8	<0.001
atrial fibrillation	9.4	10.1	8.7	8.7	8.1	7.0	7.2	7.2	<0.001
arterial hypertension	4.6	5.0	4.4	4.1	4.4	4.0	3.2	3.8	<0.001
pulmonary embolism	35.2	33.7	33.0	31.1	33.1	34.4	32.7	29.9	0.083
infective endocarditis	13.7	31.8	34.1	33.1	31.8	33.3	23.3	25.7	0.437
grown-up congenital heart disease	1.6	2.6	2.9	1.9	1.0	1.1	1.1	0.7	0.033
aortic stenosis	14.9	17.2	14.3	15.1	16.1	15.0	14.8	15.7	0.776
valvular heart diseases without aortic stenosis	17.1	16.5	15.5	13.6	13.6	12.6	13.6	12.3	<0.001
arrhythmias and conduction disturbances without atrial fibrillation	12.2	13.4	13.6	16.3	15.5	16.1	17.0	16.2	<0.001
diseases of the aorta, peripheral arteries, and veins	24.9	26.6	24.2	25.9	27.3	25.8	25.4	24.1	0.433
other cardiovascular diseases	15.4	16.9	14.2	13.2	16.9	15.5	14.8	17.0	0.514

and increased use of revascularization in properly selected patients.

In patients with myocardial infarction, we noted a slight decrease both in the number of hospitalizations and in the 12-month mortality. An important reduction in the number of deaths over the years was confirmed in the Polish Registry of Acute Coronary Syndromes (PL-ACS), both in patients with ST- and non-ST-segment elevation myocardial infarction. This effect is a result of almost universal application of primary percutaneous coronary interventions in this patient group.[24,25] Importantly, despite the downward trend, a relatively high 12-month mortality still remains a problem. The efforts to improve this situation have been undertaken, including integrated care, aimed at shortening of the time from symptom onset to intervention.

It should be noted that the number of hospitalizations of patients with arterial hypertension is decreasing. Most likely, it is associated with a better effectiveness of outpatient treatment.

In contrast, the number of hospitalizations of patients with aortic stenosis is increasing, as a natural consequence of the increase in life span. This phenomenon was observed by other authors as well.[26,27]

The number of patients with pulmonary embolism is alarmingly increasing. Such trend is in line with observations in the American population.[28] It should be emphasized that the prognosis (in-hospital and long-term) of patients with primary diagnosis of pulmonary embolism is still highly unfavorable, despite continuous improvement.

In our study, the number of hospitalizations with infective endocarditis increased by 40% over the years. This increase can be explained by increased awareness of the problem, more accurate diagnostic methods, but also by the increasing number of implantable cardiac devices. In-hospital and 12-month mortality in patients with infective endocarditis has not changed over time.

Study limitations The primary diagnosis reported to the National Health Fund according to the ICD codes represents the most serious condition and the primary cause of admission. However, the reporting systems are not uniform, the number and order of diagnoses may be subjective, and it is possible that not all relevant diagnoses had been reported. Moreover, the classification often does not specify the subcodes of individual diseases, making it difficult to exactly specify all diagnoses. Similarly, it is not mandatory to report the information on clinical characteristics, including comorbidities, so the available data in this respect may be unreliable. Therefore, we decided not to include them in the analysis.

Summary This paper presents a comprehensive analysis of 956 634 hospitalizations of patients diagnosed with a cardiovascular condition in the years from 2006 to 2014 in a province inhabited by 4.6 million people. The analysis is based on the data from the National Health Fund. All patients older than 18 years were included, without an upper age limit.

We showed important shifts in hospitalization rates and mortality (in-hospital and 12-month) in patients with different cardiovascular conditions. For the entire population, unadjusted mortality rates remained stable despite increased patient

age and shorter hospitalization time. This is possibly due to a better access to cardiology departments, highly specialized procedures, and better secondary prevention. However, we identified a number of entities such as pulmonary embolism, infective endocarditis, arrhythmias, heart failure, and stable CAD that still require considerable attention from health care managers and medical professionals. Joint activities in these areas should lead to further improvement in the prognosis of CV patients.

In conclusion, between the years 2006 and 2014, in-hospital and 12-month mortality showed a trend for decline in many disease entities, with considerable space for prognostic improvement.

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ARTYKUŁ ORYGINALNY

Przyczyny hospitalizacji i rokowanie pacjentów z chorobami sercowo-naczyniowymi

Trendy w latach 2006–2014 na podstawie danych ze Śląskiej Bazy Sercowo-Naczyniowej (SILCARD)

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SŁOWA KLUCZOWE

choroby sercowo-naczyniowe, epidemiologia, hospitalizacja, rokowanie

STRESZCZENIE

WPROWADZENIE Pomimo postępu, jaki dokonał się w ostatnich latach w kardiologii, choroby sercowo-naczyniowe pozostają główną przyczyną zgonów w krajach europejskich. Wiedza dotycząca profilu hospitalizacji z powodu chorób sercowo-naczyniowych oraz rokowania jest fragmentaryczna.

CELE Celem badania było przeanalizowanie charakterystyki i rokowania pacjentów z chorobami sercowo-naczyniowymi hospitalizowanych w latach 2006–2014, włączonych do Śląskiej Bazy Sercowo-Naczyniowej (SILCARD) obejmującej 4,6 miliona mieszkańców.

PACJENCI I METODY Baza SILCARD powstała w oparciu o dane z Wojewódzkiego Oddziału Narodowego Funduszu Zdrowia. Kryteriami włączenia były: każda hospitalizacja na oddziałach kardiologii, kardiochirurgii, diabetologii i chirurgii naczyń oraz hospitalizacja z rozpoznaniem kardiologicznym na oddziałach chorób wewnętrznych i intensywnej terapii. Dane pochodzą z 310 szpitali oraz 1863 jednostek ambulatoryjnych i obejmują 487 518 pacjentów oraz 956 634 hospitalizacji.

WYNIKI Najczęstszymi pierwotnymi przyczynami hospitalizacji były niewydolność serca (20%) i stabilna choroba wieńcowa (18,5%). Liczba hospitalizacji z powodu niewydolności serca, stenozy aortalnej i zatorowości płucnej istotnie wzrosła. Najwyższą śmiertelność 12-miesięczną stwierdzono u chorych z niewydolnością serca i zatorowością płucną (>30%). 12-miesięczna śmiertelność pacjentów z niewydolnością serca, stabilną chorobą wieńcową, zawałem serca i migotaniem przedsionków zmniejszyła się, ale w niektórych jednostkach chorobowych pozostała stosunkowo wysoka.

WNIOSKI Na przestrzeni lat 2006–2014 w wielu jednostkach chorobowych obserwowano spadek śmiertelności wewnątrzszpitalnej i 12-miesięcznej, przy znacznych możliwościach dalszej poprawy rokowania.

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