

Life years lost due to cardiovascular diseases

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Abstract

Background: When evaluating the health status of a population, an increasingly important role is played by measures aiming to access premature mortality in lost lifetime units. There is a considerable number of life years 'to be recovered' provided cardiovascular disease (CVD) mortality is reduced, as CVD cause the highest absolute number of years lost.

Aim: To access life years lost by the inhabitants of the Lodz region due to CVD and to determine the rank of each disorder within this ICD-10 class, which causes most life years lost, as well as to identify trends in this regard.

Methods: Our research was based on a dataset consisting of 313,144 death certificates, including 146,852 due to CVD, of the inhabitants of the Lodz region from 1999 to 2008. We applied the standard expected years of life lost (SEYLL) indicators per living person (SEYLL_p) and per death (SEYLL_d) to calculate life years lost. Joinpoint models were used to analyse changes in time. We also estimated average annual percentage changes in the SEYLL indicators.

Results: In 2008, the number of life years lost amounted to 754 per 10,000 males and 595 per 10,000 females. The most important contribution to life years lost among males was from ischaemic heart disease (IHD) (SEYLL_p = 200), particularly acute myocardial infarction (AMI) (SEYLL_p = 128). Nearly the same number of years lost was due to other heart disease (SEYLL_p = 199), especially heart failure (SEYLL_p = 121). Cerebrovascular disease caused 191 life years lost per 10,000 males, while diseases of arteries, arterioles and capillaries caused the loss of 98 life years per 10,000 males. In women, the highest number of life years lost was attributed to cerebrovascular disease (SEYLL_p = 176) and other heart disease (SEYLL_p = 152), especially heart failure (SEYLL_p = 95). IHD contributed to the loss of 113 life years per 10,000 females (including AMI: SEYLL_p = 62), while diseases of arteries, arterioles and capillaries led to 112 life years lost per 10,000 females.

Conclusions: The highest number of life years lost resulted from IHD among males and cerebrovascular disease among females. A growing trend in the number of life years lost due to CVD was noted since 2002 for males and since 2003 for females. These unfavourable trends decelerated considerably after 2006. The highest decrease in life years lost for both sexes in 1999–2008 was noted for IHD.

Key words: cardiovascular diseases, life years lost, Lodz, region

Kardiol Pol 2013; 71, 10: 1065–1072

INTRODUCTION

When evaluating the health status of a population, an increasingly important role is played by measures aiming to access premature mortality in lost lifetime units. Life years lost are a function of death rates and average life expectancy in a given population. Several methods can be used to measure differences between the actual situation in the studied population and the ideal (reference) mortality rate or life expectancy.

Murray and Lopez [1] suggested use of the standard expected years of life lost (SEYLL) indicator to evaluate global burden of disease due to premature mortality. This indicator

measures the number of life years lost annually in a given population compared to a reference (standard) population. The suggested standard has been life expectancy in Japan which is the highest recorded one. As per 2009 data, life expectancy in Japan was 86.5 years among women and 79.6 years in men [2]. For European comparisons, the authors of "Health statistics — Atlas on mortality in the European Union" suggested to accept life expectancy in the 15 "old" European Union countries (EU-15) as the standard, separately for men and women [3]. An alternative approach would be to use overall life expectancy in all 27 European Union countries

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Received: 26.09.2012 Accepted: 09.01.2013

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but differences in life expectancy between countries are very large. For example, mean life expectancy among men in the EU-15 countries in 2008 was 78.2 years, while in the remaining 12 eastern and middle European Union countries it was only 72 years [4]. Such an approach might thus underestimate the number of life years lost in most European countries where mean life expectancy is higher than the mean for the EU-27 countries, resulting in false conclusions. For eastern and middle European Union countries, comparisons with the mean for the EU-15 countries are useful, as they better illustrate the difference from societies characterised by a better health status and indicate possible targets in this regard.

An analysis of standard expected life years lost highlights both the social and the economic aspect of premature mortality. The highest number of life years might be "recovered" with a further reduction of cardiovascular diseases (CVD) mortality, as CVD cause the highest absolute number of years lost [5, 6].

For many years, the Lodz voivodeship has been characterised by the highest overall and CVD mortality rates in Poland [7, 8]. The aim of this study was to assess life years lost by the inhabitants of the Lodz region due to CVD and to determine the rank of each disorder within this ICD-10 class, which causes most life years lost, as well as to identify trends in this regard.

METHODS

Our research was based on a full database consisting of 313,144 death certificates of the inhabitants of the Lodz region from January 1, 1999 to December 31, 2008, made available by the Regional Centre of Public Health in Lodz and the Department of Information at the Central Statistical Office. CVD were the cause of 146,852 of these deaths (46.9%). Standard expected life years lost were calculated using the SEYLL indicator calculated according to the following formula:

$$SEYLL = \sum_{\chi=0}^l d_{\chi} e_{\chi}^*$$

where: e_{χ}^* is life expectancy at given age based on a certain ideal standard; d_{χ} is the number of deaths at the age of χ years, χ is the age at the time of death, and l is the oldest age in a given population.

Life expectancy tables for the EU-15 countries were taken as the standard. We also calculated SEYLL_p (per living person) and SEYLL_d (per death) indicators which relate absolute SEYLL numbers to the number of inhabitants and to the number of subjects who died due to the analysed cause [9, 10].

Temporal trends were analysed using joinpoint models and the Joinpoint Regression software developed by the U.S. National Cancer Institute for the Surveillance, Epidemiology and End Results program [11]. This method extends linear regression to a model in which the temporal trend is expressed by a polygonal curve, or a sequence of line segments connected to each other at joinpoints, where the trend undergoes a significant change ($p < 0.05$). We estimated annual percentage changes (APC) of SEYLL_p and SEYLL_d indicators for each line segment of the polygonal curve with corresponding 95% confidence intervals.

Our analysis was limited to 4 categories of diseases that were jointly responsible for more than 97% of all deaths due to CVD.

RESULTS

In 2008, the absolute number of standard expected life years lost due to CVD overall in the Lodz region was more than 90,000 among men and nearly 80,000 among women (Table 1), or 754 per 10,000 men and 595 per 10,000 women. The most important contribution to life years lost among males was from ischaemic heart disease (IHD) (200 per 10,000 men, or SEYLL_p = 200), and particularly acute myocardial infarction

Table 1. Life years lost due to cardiovascular disease overall (codes I00-199) reported as absolute numbers (SEYLL), per 10,000 inhabitants (SEYLL_p), and per number of deaths due to a given cause (SEYLL_d) in both genders

Year	Men			Women		
	SEYLL	SEYLL _p (per 10,000)	SEYLL _d	SEYLL	SEYLL _p (per 10,000)	SEYLL _d
1999	98895	776	13.3	86814	626	11.8
2000	95431	752	13.2	87854	636	11.8
2001	91022	720	13.1	83989	610	11.7
2002	85349	684	13.0	76715	561	11.4
2003	85213	685	12.9	74246	545	11.1
2004	86237	696	13.2	78055	575	11.5
2005	87687	711	13.3	77892	576	11.5
2006	90499	741	14.0	79763	593	12.1
2007	95332	784	14.0	82217	614	11.9
2008	91420	754	13.9	79455	595	11.8

SEYLL — standard expected years of life lost; SEYLL_p — SEYLL per living person; SEYLL_d — SEYLL per death

Table 2. Life years lost due to cardiovascular disease in 2008 for disease categories

Causes of death (ICD-10 classification)	Men		Women	
	SEYLL _p (per 10,000)	SEYLL _d	SEYLL _p (per 10,000)	SEYLL _d
Ischaemic heart disease (I20-I25)	200	15.2	113	11.3
including acute myocardial infarction (I21)	128	16.5	62	12.8
Other heart disease (I30-I52)	199	12.6	152	9.1
including heart failure (I50)	121	13.8	95	9.9
Cerebrovascular disease (I60-I69)	191	14.0	176	11.0
Diseases of arteries, arterioles, and capillaries (I70-I79)	98	9.7	112	7.4
including atherosclerosis (I70)	84	9.0	107	7.3

SEYLL_p — standard expected years of life lost (per living person); SEYLL_d — standard expected years of life lost (per death)

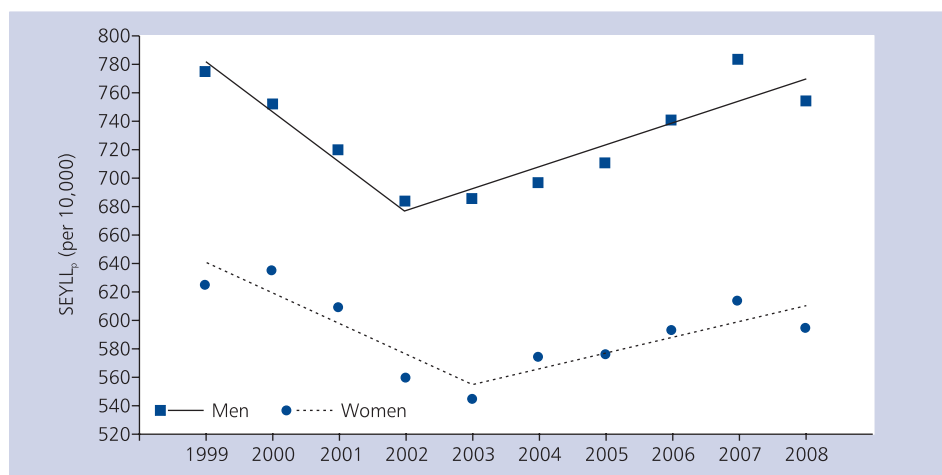


Figure 1. Trends for life years lost due to cardiovascular disease for both genders in the Lodz region in 1999–2008; SEYLL_p — standard expected years of life lost (per living person)

(AMI) (SEYLL_p = 128) (Table 2). Nearly the same number of years lost was due to other heart disease (SEYLL_p = 199), especially heart failure (HF) (SEYLL_p = 121). Cerebrovascular disease caused 191 life years lost per 10,000 males, while diseases of arteries, arterioles and capillaries caused the loss of 98 life years per 10,000 males (including atherosclerosis: SEYLL_p = 84).

In women, the highest number of life years lost was attributed to cerebrovascular disease (SEYLL_p = 176) and other heart disease (SEYLL_p = 152), especially HF (SEYLL_p = 95). IHD contributed to the loss of 113 life years per 10,000 females (including AMI: SEYLL_p = 62), while diseases of arteries, arterioles and capillaries led to 112 life years lost per 10,000 females (including atherosclerosis: SEYLL_p = 107).

Downward trends in life years lost were seen until 2002 in men and 2003 in women, followed by a “break-through” and subsequent increase in the number of life years lost in both genders (Fig. 1). Among men, SEYLL_p decreased

at the rate of –4.7% per year in 1999–2002 ($p < 0.05$), and then began to increase at the rate of 2.1% per year in 2002–2008 ($p < 0.05$). Among women, SEYLL_p decreased at the rate of –3.6% per year in 1999–2003 ($p < 0.05$), and then began to increase at the average rate of 1.9% per year after 2003 ($p = \text{NS}$) (Table 3).

HF was responsible for the most increase in the number of life years lost in both genders. For this cause of death, SEYLL_p increased at the average rate of 28.4% per year in 2003–2006 ($p < 0.05$) in men and 25.4% per year in 2002–2006 ($p < 0.05$) in women. After 2006, this trend decreased but remained growing at the rate of 1.9% per year in men and 0.9% in women ($p = \text{NS}$).

Adverse trends regarding the number of life years lost were also observed for cerebrovascular disease. Among men, a growing trend was seen during the whole decade, initially at the rate of 0.5% per year, and after 2003 at the rate increased to 2.7% per year ($p < 0.05$) (Fig. 2). Among

Table 3. Temporal trends for SEYLL_p (per 10,000) in the Lodz region in 1999–2008 — joinpoint regression analysis

Causes of death (ICD-10 classification)	No. of join- -points	Years	Men			Women		
			APC	95% CI		APC	95% CI	
Cardiovascular disease overall (I00-I99)	1	1999–2002	-4.7*	-8.4	-0.9	-3.6*	-6.5	-0.5
		2002–2008	2.1*	0.8	3.5	1.9	-0.3	4.2
Ischaemic heart disease (I20-I28)	0	1999–2008	-1.9*	-3.2	-0.6	-0.9	-2.4	0.7
including acute myocardial infarction (I21)	0	1999–2008	-3.1*	-5.2	-1.0	-3.2*	-5.9	-0.5
Other heart disease (I30-I52)	1	1999–2002	-6.3	-16.9	5.5	-6.9	-18.4	6.4
		2002–2008	7.8*	3.6	12.3	6.2*	1.5	11.1
including heart failure (I50)	2	1999–2003	-7.1*	-12.6	-1.3	-21.5*	-24.7	-18.2
		2003–2006	28.4*	6.0	55.5	25.4*	20.3	30.7
		2006–2008	1.9	-15.9	23.4	0.9	-7.2	9.7
Cerebrovascular disease (I60-I69)	1	1999–2003	0.5	-0.9	2.1	0.1	-1.5	1.7
2003–2008	2.7*	1.6	3.8					
Diseases of arteries, arterioles, and capillaries (I70-I79)	0	1999–2008	-1.3	-3.4	0.9	-1.9	-4.0	0.1
including atherosclerosis (I70)	0	1999–2008	-1.8	-4.5	1.1	-2.1	-4.2	0.1

*p < 0.05; APC — annual percentage change; CI — confidence interval

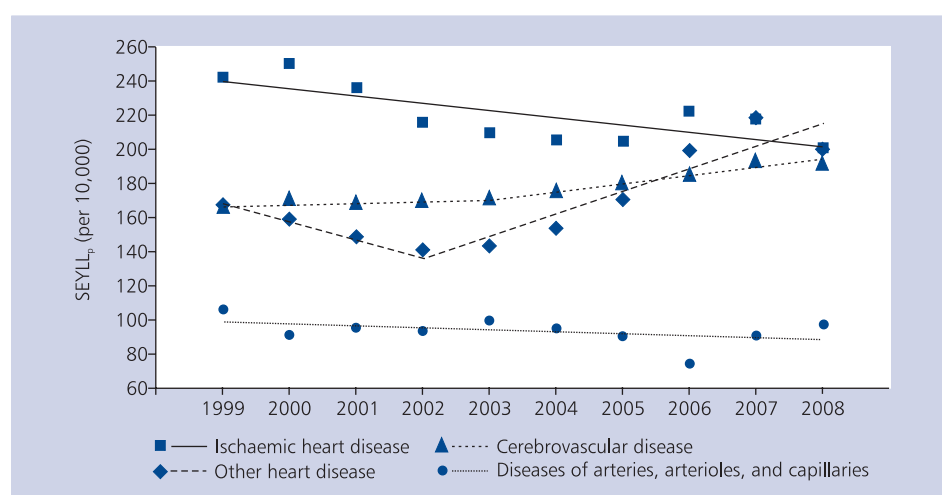


Figure 2. Trends for life years lost due to cardiovascular disease in men for different causes of death in the Lodz region in 1999–2008; SEYLL_p — standard expected years of life lost (per living person)

women, the number of life years lost due to cerebrovascular disease changed only minimally (APC 0.1%, $p = \text{NS}$) (Fig. 3).

The number of life years lost due to diseases of aorta, arteries, and capillaries decreased at a small but constant rate in both genders (-1.3% in men and -1.9% in women, $p = \text{NS}$). For atherosclerosis, this decrease was slightly greater than the average in this disease category, at -1.8% in men and -2.1% in women ($p = \text{NS}$).

The highest decrease in the number of life years lost in both genders was seen for IHD, and particularly AMI. For the latter, SEYLL_p decreased at the rate of -3.1% per year ($p < 0.05$) in men and -3.2% per year ($p < 0.05$) in women.

Analysis of SEYLL_d indicators, calculated as the ratio of the number of life years lost due to CVD to the number of subjects who died due to a given cause, showed that a man who died in 2008 lost on average nearly 14 years of age and a woman who died in 2008 lost about 12 years of age, and this number showed a growing trend in both genders in 2003–2006. When analysed separately for various categories of mortality causes, the highest number of life years lost per death was due to IHD (15.2), and particularly AMI (16.5), while lowest SEYLL_d values were found for diseases of aorta, arteries, and capillaries (9.7), and particularly atherosclerosis (9.0). Among women, the number of years of life lost was

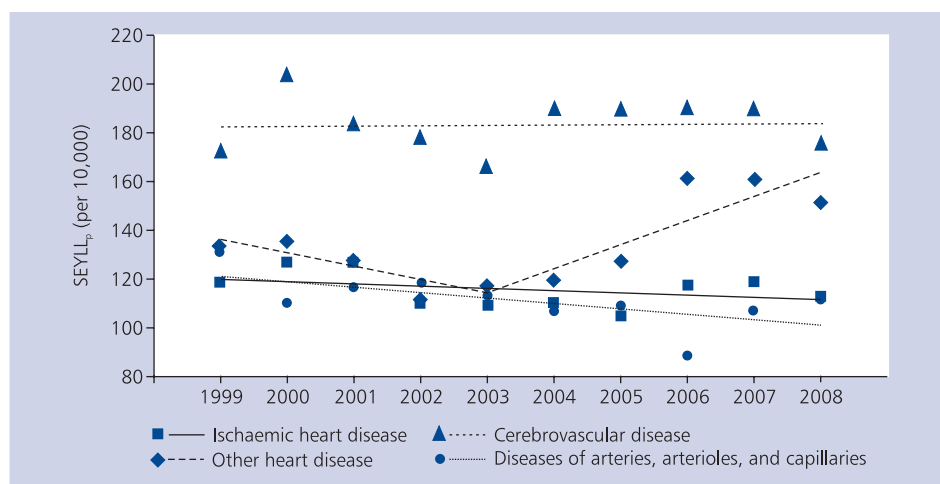


Figure 3. Trends for life years lost due to cardiovascular disease in women for different causes of death in the Lodz region in 1999–2008; SEYLL_p — standard expected years of life lost (per living person)

lower compared to men, but relative weights of particular causes of mortality did not differ. Most years of life were lost by women who died due to IHD (11.3), including AMI (12.8), and fewest years of life were lost by women who died due to diseases of aorta, arteries, and capillaries (7.4), including atherosclerosis (7.3).

DISCUSSION

After 1991, the importance of CVD as the cause of mortality began to decrease systematically both in the Lodz region and in whole Poland [12]. According to Badosz et al. [13], more than half of the decrease in the number of deaths due to IHD may be attributed to a reduction in risk factors, and only one third to treatment. However, lower standardised mortality rates due to CVD are not reflected in the trends observed for the number of life years lost. One of causes for this is progressive aging of the Lodz voivodeship population. In 2010, the proportion of persons aged 65 or more was 15%, the highest value noted in the whole country. Adverse changes in the population age structure resulted in a small but constant increase in actual mortality rates due to CVD after 2002 (APC of 0.5% among men and 1.2% among women). However, the rate of the increase in the number of life years lost was even higher which indicates that population aging is not the sole cause of this problem. This is also evidenced by the comparison of changes in SEYLL_d which showed an increasing trend, particularly among men who died due to cerebrovascular disease (APC 1.0%, $p < 0.05$) and HF (APC 1.0%, $p = \text{NS}$). Another reason of the increase in the number of life years lost among men was higher increase in life expectancy in the UE-15 countries compared to the Lodz region. In 1999–2008, life expectancy in the UE-15 countries increased by 2.9 years, from 75.1 to 78.0 years (APC 0.4%), and life expectancy in the Lodz region increased by 2.1 years, from

67.0 to 69.1 years (APC 0.3%). Among women, the increase in life expectancy in the UE-15 countries and the Lodz region was the same, on average 0.3% per years, with life expectancy in the UE-15 countries increased by 1.9 years, from 81.7 to 83.6 years, and life expectancy in the Lodz region increased by 2.4 years, from 76.5 to 78.9 years [4].

Similarly to other countries, CVD mortality rate reduction in Poland was mostly related to a decrease in the number of death due to IHD [14–18]. An analysis of mortality rate due to IHD in 7 European countries including the Netherlands, Great Britain, France and 4 Scandinavian countries showed that if the current trends would continue, CVD mortality rate in 2030 would be reduced by further 50% compared to 2005 [19]. Comparison of standardised death rates showed that in the Lodz region, values for IHD in both genders were lower than the average for the whole Poland (12.2/10,000 vs. 14.7/10,000 in men and 5.2/10,000 vs. 6.9/10,000 in women), while for other heart disease, mostly HF, standardised death rates in the Lodz region were higher than the average for the whole Poland (15.0/10,000 vs. 11.4/10,000 in men and 8.5/10,000 vs. 6.2/10,000 in women). These trends seem to support the hypothesis of a close relationship between mortality rates due to IHD and HF. The latter is the end-stage of cardiac damage due to various disease processes. Advances in the treatment of acute coronary syndromes resulted in much improved outcomes, in particular a significant reduction of mortality in AMI. Many patients now survive the acute phase of MI but later develop HF due to significant cardiac damage. An improvement in the diagnosis and treatment of CVD, and particularly of IHD, may thus paradoxically increase morbidity due to HF [20, 21]. Our analysis of the mortality rates in the Lodz region seems to support the notion that HF becomes a major diagnostic and therapeutic challenge for modern

cardiology. Of note, the increase in the number of life years lost largely decreased after 2006, likely due to advances in the diagnosis and treatment of HF resulting, among other, from the IMPROVEMENT and EUROHEART HF studies and the POLKARD National Program by the Polish Ministry of Health which provided wide educational opportunities for primary care physicians and led to an improved access to diagnostic tests in patients with HF [22, 23].

An increasing trend, particularly among men, was also noted for the number of life years lost due to cerebrovascular disease, which may indicate a continuing high incidence but also lack of expected advances in the treatment of these diseases. A Finnish analysis of data from 9 countries participating in the WHO MONICA program showed an increasing trend for mortality rates due to stroke both in Poland and other Eastern European countries. It was also shown that two thirds of this increase were due to a growing stroke case fatality rate, and only one third due to an increase in its incidence [24]. According to the 2005 WHO Regional Office for Europe data, the highest excess premature mortality in Poland in comparison to all EU countries was related to cerebrovascular disease (89% in men and 67% in women) [25].

Comparisons with other EU countries show a very large variation in the number of life years lost due to CVD [3, 26, 27]. In the EU-15 countries, the average yearly SEYLL_p in 2002–2004 was 410 per 10,000 in men and 390 per 10,000 in women. The lowest numbers of life years lost were noted in France (280 and 250 per 10,000) and Spain (320 and 300 per 10,000). In Poland, SEYLL_p was 650 per 10,000 in men and 530 per 10,000 in women. Of note, these values were lower than in nearly all new European member countries except for Malta and Cyprus. The highest numbers of life years lost due to CVD were noted in Bulgaria (1400 and 1200), Latvia (1200 and 1000), and Romania (1000 and 980). In the Lodz region, average SEYLL_p values in 2002–2004 were 690 per 10,000 in men and 560 per 10,000 in women, slightly higher than the average for the whole Poland. In comparison to the most favourable data available from France, the number of life years lost in the Lodz region was 2.5-fold increased among men and nearly 2.2-fold increased among women.

The average yearly number of life years lost due to IHD in the EU-15 countries was 190 per 10,000 in men and 130 per 10,000 in women. In countries with the lowest burden of mortality due to IHD, including the Netherlands, Portugal, Spain and France, SEYLL_p ranged from 33 to 152 per 10,000 in men and from 18 to 95 per 10,000 in women. In countries with the highest burden of mortality due to IHD, SEYLL_p ranged from 290 to 730 per 10,000 in men and from 210 to 250 per 10,000 in women. These countries included the majority of the 12 new EU member states (Lithuania, Latvia, Estonia, Hungary, Romania, Bulgaria, Czech Republic, and Slovakia), but also some of the EU-15 countries including Finland, Great Britain, Germany, Sweden, and Austria. A large geographical

variation in the number of life years lost due to IHD was noted in Poland. The Lodz voivodeship, with the average SEYLL_p of 210 per 10,000 in men and 110 per 10,000 in women, was among the regions characterised by lower numbers of life years lost due to IHD in Poland. Of note, SEYLL_p for women in the Lodz region was lower than then mean values in the EU-15 countries.

Cerebrovascular disease resulted in the loss of 85 years per 10,000 in men and 100 years per 10,000 in women in the EU-15 countries. A large variation was noted in the number of life years lost between EU countries, with the best data obtained in France where SEYLL_p was 4-fold lower than in Bulgaria, where the number of life years lost due to these diseases was the highest. In the Lodz region, SEYLL_p was 171 per 10,000 in men and 177 per 10,000 in women, and these values were increased 2-fold among men and 1.7-fold among women in comparison to the mean values for the EU-15 countries.

Limitations of the study

The authors are well aware of the limitations of the present study. One of these limitations was the 10-year duration of the study period, not particularly long in the context of evaluation of trends regarding SEYLL. However, extending this period to years before a major administrative reform in Poland that took place on January 1, 1999 would introduce a significant bias related to changes in the area, and thus the population of the Lodz voivodeship. On the other hand, the 10-year study period was long enough to introduce some variation in the quality of reporting and coding causes of death, as highlighted in the literature on this topic [28, 29].

The authors believe, however, that the present analysis of data from more than 300,000 death certificates, including 146,852 deaths due to CVD, and the use of methodology to evaluate life years lost fills the gap in the Polish literature regarding economic and social losses due to these diseases, and allows international comparisons of these national data.

CONCLUSIONS

1. In the analysed decade (1999–2008), the number of life years lost due to CVD in the Lodz region showed an increasing trend since 2002 in men and since 2003 in women. These adverse trends correlated with population aging and an increasing number of life years lost due to HF in both genders and due to cerebrovascular disease in men.
2. The highest decrease in the number of life years lost in the Lodz region in 1999–2008 was noted in both genders for IHD, and particularly AMI. The highest increase in SEYLL was seen for HF but these adverse trends decreased significantly after 2006.
3. A continuously worse CVD epidemiology among men compared to women is a worrisome issue in regard to both higher numbers of life years lost, and less beneficial

trends noted for changes in the evaluated parameters. Extensive long-term epidemiological surveillance is justified to guide appropriate public health policy to reduce the number of years lost due to premature CVD mortality.

The study was supported by the Medical University of Lodz grant No. 503/6-029-07/503-01.

Conflict of interest: none declared

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Utracone lata życia z powodu chorób sercowo-naczyniowych

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Streszczenie

Wstęp: W ocenie stanu zdrowia populacji coraz większą rolę pełnią parametry, za pomocą których ocenia się przedwczesną umieralność w jednostkach utraconego czasu życia. Analiza różnic w tym zakresie między populacją badaną a referencyjną (standardową) zwraca uwagę na społeczny, ale również ekonomiczny aspekt strat związanych z przedwczesną umieralnością.

Najwięcej lat „do odzyskania” mogłoby zapewnić dalsze ograniczenie liczby zgonów spowodowanych chorobami sercowo-naczyniowymi (CVD), które są przyczyną największej bezwzględnej liczby utraconych lat.

Cel: Celem pracy była ocena utraconych lat życia mieszkańców województwa łódzkiego z powodu CVD i ustalenie rangi poszczególnych chorób w tej klasie ICD-10 będących przyczyną największej liczby utraconych lat życia oraz wyznaczenie trendów zmian w tym zakresie.

Metody: Materiał do badania stanowiła baza danych utworzona na podstawie 313 144 kart zgonów, w tym 146 852 zgonów z powodu CVD mieszkańców województwa łódzkiego w okresie od 1.01.1999 do 31.12.2008 r. Do obliczenia utraconych standardowych przewidywanych lat życia zastosowano wskaźniki SEYLL_p (*Standard Expected Years of Life Lost per living person*) i SEYLL_d (*per death*). Jako populację standardową przyjęto 15 krajów „starej” Unii Europejskiej. Analizę trendów czasowych przeprowadzono za pomocą modeli *joinpoint*. Oszacowano też średnioroczne procentowe tempa zmian współczynników SEYLL wraz z odpowiadającymi im 95-procentowymi przedziałami ufności.

Wyniki: W 2008 r. liczba utraconych lat życia osiągnęła wartość wynoszącą 754 na 10 tys. mężczyzn i 595 lat na 10 tys. kobiet. Wśród mężczyzn największy udział w utraconych latach życia miała choroba niedokrwienna serca (SEYLL_p = 200), a w tej grupie przyczyn przede wszystkim ostry zawał serca (AMI) (SEYLL_p = 128). Niemal taką samą liczbę utraconych lat spowodowały inne choroby serca (SEYLL_p = 199), a wśród nich głównie niewydolność serca (SEYLL_p = 121). Choroby naczyń mózgowych były przyczyną 191 utraconych lat życia na 10 tys. mężczyzn, zaś choroby tętnic, tętniczek i naczyń włosowatych spowodowały utratę 98 lat życia na 10 tys. mężczyzn. W grupie kobiet przyczyną największej liczby utraconych lat życia były choroby naczyń mózgowych (SEYLL_p = 176) oraz inne choroby serca (SEYLL_p = 152), w tym przede wszystkim niewydolność serca (SEYLL_p = 95). Choroba niedokrwienna serca spowodowała utratę 113 lat życia na 10 tys. kobiet (w tym AMI: SEYLL_p = 62), zaś choroby tętnic, tętniczek i naczyń włosowatych były przyczyną utraty 112 lat życia na 10 tys. kobiet. Trendy utraconych lat życia do 2002 r. w grupie mężczyzn i 2003 wśród kobiet miały kierunek malejący, po czym nastąpił „punkt przełomu” i liczba utraconych lat u obu płci zaczęła wzrastać — w grupie mężczyzn w średnim tempie 2,1% rocznie, w grupie kobiet w tempie wynoszącym 1,9% rocznie. Za wzrost liczby utraconych lat życia u obu płci była w największym stopniu odpowiedzialna niewydolność serca. Współczynnik SEYLL_p dla tej przyczyny zgonów wzrastał w latach 2003–2006 w średnim tempie 28,4% rocznie w grupie mężczyzn, zaś w grupie kobiet w latach 2002–2006 w tempie 25,4% rocznie. Po 2006 r. wzrost uległ wyhamowaniu, jednak trend pozostał rosnący i wynosił 1,9% wśród mężczyzn i 0,9% wśród kobiet. Niekorzystna sytuacja w zakresie liczby utraconych lat życia dotyczyła również chorób naczyń mózgowych. W grupie mężczyzn w całym 10-leciu występował trend rosnący, przy czym w latach 1999–2003 był to niewielki wzrost w tempie wynoszącym 0,5% rocznie, po 2003 r. tempo wzrostu uległo przyspieszeniu do 2,7% rocznie. W grupie kobiet liczba utraconych lat życia z powodu chorób naczyń mózgowych ulegała bardzo niewielkim zmianom. Największy spadek liczby utraconych lat życia dotyczył choroby niedokrwiennej serca, a zwłaszcza AMI, dla którego współczynnik SEYLL_p zmniejszał się w tempie –3,1% rocznie w grupie mężczyzn i –3,2% rocznie w grupie kobiet. Współczynniki SEYLL_d obliczone jako stosunek liczby utraconych lat życia z powodu CVD do liczby osób zmarłych z powodu tej klasy przyczyn zgonów informują, że mężczyzna zmarły w 2008 r. stracił średnio prawie 14 lat życia, kobieta zaś ok. 12 lat życia. W grupie mężczyzn największą liczbę utraconych lat życia spowodowała choroba niedokrwienna serca (15,2), a przede wszystkim AMI (16,5), zaś najniższe wartości SEYLL_d dotyczyły chorób tętnic, tętniczek i naczyń włosowatych (9,7), zwłaszcza miażdżycy (9,0). W grupie kobiet najwięcej lat życia utraciły kobiety zmarłe z powodu choroby niedokrwiennej serca (11,3), w tym z powodu AMI (12,8), najmniej z powodu chorób tętnic, tętniczek i naczyń włosowatych (7,4), w tym z powodu miażdżycy (7,3).

Wnioski: Przyczyną największej liczby utraconych lat życia w grupie mężczyzn była choroba niedokrwienna serca, zaś w grupie kobiet choroby naczyń mózgowych. Liczba utraconych lat życia z powodu CVD w województwie łódzkim od 2002 r. w grupie mężczyzn i od 2003 r. w grupie kobiet miała trend rosnący. W największym stopniu przyrost ten był spowodowany umieralnością z powodu niewydolności serca, jednak te niekorzystne tendencje uległy po 2006 r. znacznemu wyhamowaniu. Rosnące trendy wykazywała również liczba utraconych lat życia z powodu chorób naczyń mózgowych. Największy spadek liczby utraconych lat życia w latach 1999–2008 dotyczył u obu płci choroby niedokrwiennej serca, a przede wszystkim AMI.

Słowa kluczowe: choroby sercowo-naczyniowe, utracone lata życia, trendy, województwo łódzkie

Kardiologia 2013; 71, 10: 1065–1072

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Praca wpłynęła: 26.09.2012 r. Zaakceptowana do druku: 09.01.2013 r.