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*Epidemiological situation of tuberculosis in Poland
at the end of the 20th century*

Sytuacja epidemiologiczna gruźlicy w Polsce u schyłku XX wieku

Tuberculosis is an infectious disease caused by the microorganism *Mycobacterium tuberculosis* from the family of *Mycobacteriaceae*. The bacteria were discovered by Robert Koch in 1882. They affect mainly lungs (80-95%), but also urinary system, lymph nodes, bones and joints, meninges and brain (13, 14).

According to the WHO 1/3 of world population is infected with *Mycobacterium tuberculosis*. Not every infection is followed by the development of the disease - only 5-10% of infected population develops tuberculosis (13, 14). That accounts for about 9 million of new cases of disease worldwide every year (5). In Poland the number of new cases of tuberculosis decreases continually. In 1975 there were recorded 26,255 cases, in 1985 - 21, 650, while in 1995 - 15,959 cases (12). According to the newest data in 1999 there were recorded 12,179 cases (7).

INCIDENCE

The most important epidemiological index is the incidence rate described as the number of new cases of tuberculosis per 100,000 inhabitants (1). In Poland this rate in the last quarter of the 20th century was shown in Figure 1. It can be concluded on the basis of the chart that the epidemiological situation of tuberculosis in Poland is improving constantly and the decreasing trend in incidence is continued (10). This success was

achieved due to the cooperation of medical services and administrative agencies. Prophylactic actions on a large scale, such as obligatory vaccination of newborns, infants and adolescents together with tuberculinic tests carried out since 1955, are one of the largest actions of this type in Poland (8). Also periodic chest X-rays are taken in people from the groups of high risk of exposure to *Mycobacterium tuberculosis* - physicians, medical students, policemen etc. These are the reasons why the interest in tuberculosis as a social problem is smaller and smaller. However, the structure of actions against tuberculosis shall not be disassembled and the disease should not be treated only as a medical problem. Although in comparison with the rest of the world Poland is the country of medium incidence of tuberculosis, the comparison of our results with the European ones testifies to the fact that in the combat against this disease we are at the point which the countries of Western Europe passed about 20 years ago (2). This is illustrated in Figure 2 in which tuberculosis incidence in Poland is presented in comparison with that in Europe (2, 10).

Also the structure of incidence is very bad in comparison with other European countries. The population in the group from 20 to 44 years of age comprises in our country as much as 36.1% of all cases of tuberculosis (11). Only a slight decrease is observed in this category (in 1997 - 38.6%, 1998 - 38.1%). The share of the incidence in the population over 65 years of life rises from 18.5% in 1989 to 24.1% in 1999. As far as the localization of tuberculous changes is concerned, in Poland the extrapulmonary disease is observed in about 5% of the cases (in 1997 - 4.1%, in 1999 - 4.4%), while the other 95% are the changes in lungs and pleura. This ratio has been constant for many years and supports the assumption that this type of the disease is underregistered and not well diagnosed as in Europe the extrapulmonary type consists in about 20% of tuberculosis (3, 12).

Men in Poland are affected twice as often as women. The rural population gets the disease somewhat more often than the urban population (Tab. 1). There exist considerable differences in incidence on the territory of Poland. The regions characterized by the

Tab.1 Incidence of tuberculosis (all forms) according to gender and place of residence in Poland in 1989-1999. Rates per 100,000 population

Year	Total	Males	Females	Urban areas	Rural areas
1989	42.8	58.4	26.8	41.1	44.0
1990	42.3	57.3	27.2	40.6	43.9
1991	43.1	59.6	26.6	41.5	44.6
1992	43.1	59.9	26.5	42.6	42.9
1993	43.8	59.4	28.1	42.5	44.8
1994	43.2	58.9	27.4	41.8	44.3
1995	41.4	56.6	26.9	39.8	42.6
1996	39.8	54.9	25.4	39.1	40.8
1997	36.1	49.6	23.4	34.9	38.2
1998	34.4	47.4	22.1	33.7	35.6
1999	31.5	43.4	20.2	31.0	32.4

highest incidence in 1999 are the following provinces: łódzkie - 41.2; mazowieckie - 40.7; świętokrzyskie - 40.7; śląskie - 39.2. The lowest rates are observed in the following regions: wielkopolskie - 21.8; małopolskie - 22.3; zachodniopomorskie - 24.7; podlaskie - 25.2 (4, 12).

MORBIDITY

The morbidity rates in Poland are continuously decreasing (Fig. 1). The number of sources of infection that is the sputum-positive patients is falling down. In 1999 the highest rate of these patients was observed in the following provinces: łódzkie - 27.7; śląskie - 26.3; podkarpackie - 24.2; while the lowest in the following regions: warmińsko-mazurskie - 13.6; wielkopolskie - 14.6; kujawsko-pomorskie - 16.0 (4, 12).

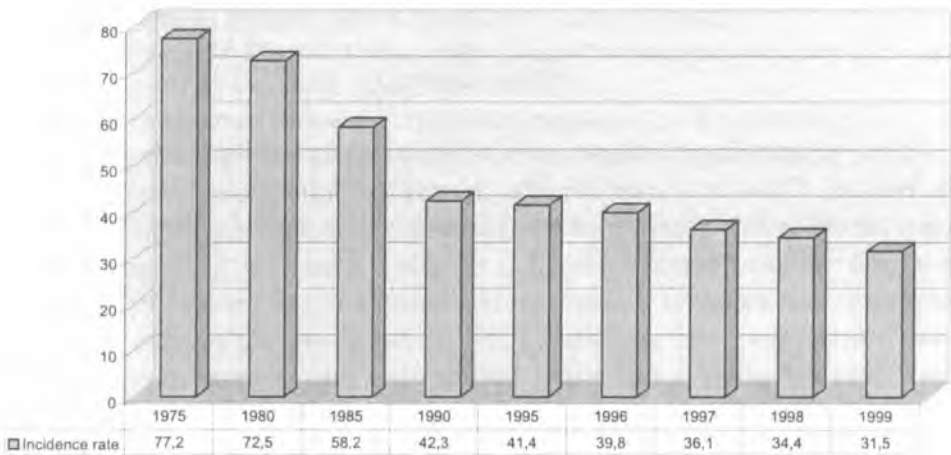


Fig.1 The incidence of tuberculosis per 100,000 population in Poland

MORTALITY

In 1997 in Poland 775 people died due to tuberculosis - the rate per 100,000 inhabitants amounted to 2.0, which is about 0.2% of all deaths in Poland in that year (6). The highest mortality rate was observed in the group of patients over 65 years of life - 8.3. Men (mortality rate - 3.2 per 100,000) die of tuberculosis four times more often than women (mortality rate 0.8) (12).

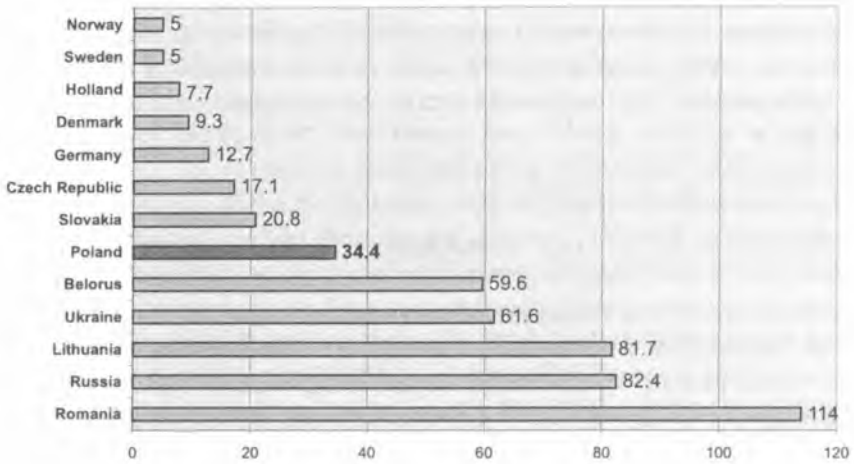


Fig.2 Incidence of tuberculosis in Europe, rates per 100,000 inhabitants

CONCLUSIONS

The epidemiological situation of tuberculosis is continuously improving in Poland. There is a considerable chance that this positive trend will be maintained in the years to come. However, this requires participation of not only medical services but also of other state and local government agencies. It is essential to improve the notifiability of tuberculosis by general practitioners and specialists. The whole diagnostic process of *Mycobacterium* detection is inefficient because the rate of sputum-positive patients confirmed by bacteriological tests is very low. Also too large discrepancies in incidence rates between the provinces support this assumption. The reduction of this problem to the level reached by the European Union countries will require a considerable effort of the structures of the Polish state.

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STRESZCZENIE

Celem pracy jest przedstawienie trendów epidemiologicznych gruźlicy w populacji polskiej u schyłku XX wieku. Zebrano dane dotyczące epidemiologii gruźlicy na podstawie informacji publikowanych przez Instytut Gruźlicy i Chorób Płuc, Główny Urząd Statystyczny oraz meldunków Państwowego Zakładu Higieny. Przeanalizowano zapadalność, chorobowość i umieralność na gruźlicę w Polsce w różnych przedziałach wiekowych oraz ze względu na płeć i miejsce zamieszkania. Dane porównano ze wskaźnikami dla krajów europejskich. Zebrany materiał wskazuje na stopniową poprawę sytuacji epidemiologicznej gruźlicy w Polsce w ciągu ostatnich dziesięcioleci oraz sugeruje możliwość utrzymania tego pozytywnego trendu w następnych latach, pod warunkiem, że programy zwalczania gruźlicy będą kontynuowane. Jedynie współdziałanie służb medycznych i niemedycznych umożliwi obniżenie wskaźników epidemiologicznych w Polsce do poziomu w krajach Unii Europejskiej.

