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LEGIONELLOSIS IN POLAND IN 2013*

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ABSTRACT

OBJECTIVE. The objective of the article is to assess the epidemiological situation of legionellosis in Poland in 2013 in comparison to the preceding years.

MATERIAL AND METHODS. The analysis of epidemiological situation was based on the data published in the annual bulletin: “Infectious diseases and poisonings in Poland in 2013” and its prior versions as well as the legionellosis case reports sent to the Department of Epidemiology of NIPH-NIH.

RESULTS. In Poland, all cases of legionellosis, including Legionnaires’ disease – a form of disease accompanied by pneumonia and mild, influenza-like form of infection - Pontiac fever are routinely reported to the surveillance. In 2013, a total of 11 legionellosis cases were reported (all 11 were cases of Legionnaires’ disease and no one case of Pontiac fever); the incidence was 0.029 per 100,000 population which was a bit higher compared to the previous year but was 40 % lower from the median incidence for 2007-2011. The infections were reported in 7 provinces. The incidence in males (0.04 per 100,000) was slightly higher compared to females (0.02). No legionellosis outbreaks were registered – all infections were of sporadic nature. All cases were hospitalized., of these, seven were infected in the country, including three hospital acquired infections. Four infections were associated with travels abroad (one to Austria, one to Bulgaria, one to Germany and one to Italy). All the four cases connected with travel abroad survived., but 5 cases from 7 infected in Poland were fatal. The sanitary inspection reported that four fatal cases were over the age of 50, but one girl was 14 years old

CONCLUSIONS. In 2013, no changes of fundamental features of legionellosis epidemiological situation in Poland were observed. It is recommended to enhance the surveillance for legionellosis, with emphasis on conducting environmental investigation in areas where infections have occurred.

Key words: Legionnaires’ disease, legionellosis, atypical pneumonia, Legionella sp., infectious diseases, epidemiology, Poland, 2013

INTRODCUTION

In the European Union countries, the cases of Legionnaires’ disease (pneumonic form of legionellosis) are classified as ‘confirmed’ or ‘probable’ based on the criteria included in the definition adopted by the European Commission under the decision of 28 April 2008 (2008/426/EC). In Poland, mild, influenza-like infections without pneumonia (Pontiac fever) are also notifiable. The definitions which were applicable in the routine surveillance in 2013 are accessible at the website of the National Institute of Public Health – National Institute of Hygiene http://www.pzh.gov.pl/oldpage/epimeld/inne/Def_PL2_2a.pdf.

MATERIAL AND METHODS

To assess the epidemiological situation, the data were retrieved from the following sources:

- annual bulletins “Infectious diseases and poisonings in Poland in 2013” for 2007-2013 (NIPH-NIH, CSI, Warsaw);
- legionellosis case reports from 2013 sent to the Department of Epidemiology of NIPH-NIH by the sanitary and epidemiological stations;
- ECDC data regarding travel-associated Legionnaires’ disease cases which are popularized within European Legionnaires’ Disease Surveillance Network (ELDSNet).

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RESULTS

In 2013, a total of 11 legionellosis cases were reported in Poland, all cases of Legionnaires' disease and no one case of Pontiac fever, i.e. one more case compared to 2012 and 7 individuals less than median for 2007-2011, (Tab. I). The incidence was 0.029 per 100,000 population was similar to the incidence for 2011, but 40% lower from the median incidence for 2007-2011. Only sporadic cases were notified. Compared to the previous year legionellosis occurred in similar number of provinces (7); the highest number of infections (3) was reported in poznańskie province (incidence 0.087/100,000) but the highest incidence was in warmińsko-mazurskie province (0,138). No one of legionellosis cases were registered in 9 provinces (Tab. I).

In 2013, nearly 75% of cases were reported pursuant to the definition adopted for surveillance purposes as the confirmed cases (*Legionella pneumophila* serogroup 1 antigen in urine were detected for confirmation of 7 cases and 1 was confirmed by the detection of significant increase titre of antibodies for *Legionella pneumophila* sg 1 in two specimens of examined serum. The criteria for probable case were met in the case of 3 individuals.. All cases which were classified as probable cases were confirmed by single high titre of serum antibodies.

The majority of cases were reported in first and second quarter of the year (4 and 3 cases, respectively). The incidence in males (0.04 per 100,000 population) was higher than the incidence in females (0.02). Irrespective of the fact that infections occurred in the individuals aged 14-71 years old, a typical trend of Legionnaires' disease was observed – the older individuals predomi-

nated as they are more susceptible to infections; the median age for 2013 was 55 years.

All of the notified infections were of sporadic nature. They were accompanied by pneumonia and required hospitalization. As many as 7 infections were acquired in the country, including three hospital - associated cases. Four infections were linked to the travels abroad (one to Austria, one to Bulgaria, one to Germany and one to Italy).

According to the State Sanitary Inspection, 5 fatal cases due to legionellosis were registered in 2013 among the patients that were infected in Poland: 3 men, one female in the age 51 years and one girl 14 years old died.. The death rate of the all 11 cases registered in Poland in 2013 were 45%. It is the highest death rate from all EU countries.

In the majority of cases notified in 2013, no environmental investigations were conducted to identify the exposure conditions and source of infection. Only in the case of two individuals, the environmental investigation was performed.

SUMMARY AND CONCLUSIONS

In 2013, a significant decrease in legionellosis incidence compared to the previous years was observed in Poland. Furthermore, the illness was heavy with high death rate. It suggests that the number of registered cases is much lower than in reality and not reflect the true epidemiological situation of legionellosis in Poland. The laboratory examination are performed mostly in patients in heavy conditions when treatment is unsuccessful - that may explain the death rate much higher than the median death rate in European countries.

Table I. Legionellosis in Poland 2007 - 2013. Number of cases and incidence per 100 000 population (by date of registration), by voivodeship.

Province	Median 2007-2011		2012		2013	
	Number of cases	Incidence	Number of cases	Incidence	Number of cases	Incidence
Poland	18	0.047	10	0.026	11	0.029
Dolnośląskie	1	0.034	-	-	-	-
Kujawsko-pomorskie	1	0.048	3	0.143	1	0.048
Lubelskie	1	0.046	-	-	-	-
Lubuskie	0	-	-	-	-	-
Łódzkie	0	-	1	0.040	-	-
Małopolskie	0	-	1	0.030	1	0.030
Mazowieckie	4	0.076	3	0.057	2	0.038
Opolskie	0	-	-	-	-	-
Podkarpackie	0	-	-	-	-	-
Podlaskie	0	-	-	-	1	0.084
Pomorskie	0	-	-	-	1	0.044
Śląskie	3	0.065	-	-	-	-
Świętokrzyskie	0	-	-	-	-	-
Warmińsko-mazurskie	0	-	1	0.069	2	0.138
Wielkopolskie	0	-	1	0.029	3	0.087
Zachodniopomorskie	0	-	-	-	-	-

From the epidemiological surveillance perspective, a necessity is to raise the interest in the detection of legionellosis, with emphasis on pre-laboratory procedures (when, how and who should donate sample for laboratory testing) and perception of legionellosis as a public health-threatening disease in a manner which would ensure conducting the environmental investigation and initiating the procedures preventing epidemic as soon as possible. Therefore, the analysis of infections in relation to environmental settings in which the individuals acquired the infection is of relevance.

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