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LEGIONELLOSIS IN POLAND IN 2012

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ABSTRACT

OBJECTIVE. The objective of the article is to assess the epidemiological situation of legionellosis in Poland in 2012 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 2012” 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 2012, a total of 10 legionellosis cases were reported (8 cases of Legionnaires’ disease and 2 cases of Pontiac fever); the incidence was 0.026 per 100,000 population which compared to the previous year and median incidence for 2006-2010 was 45% and 65% lower, respectively. The infections were reported in 6 provinces. The incidence in males (0.03 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. The sanitary inspection reported two fatal cases over the age of 60. Of these infections, seven were developed in the country, including one hospital- and one sanatorium-acquired infection. Two infections were associated with travels abroad (one to Spain and one to Egypt) and one infection occurred in driver while transporting the goods to the Netherlands.

CONCLUSIONS. In 2012, 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.

Keywords: *Legionnaires’ disease, legionellosis, atypical pneumonia, Legionella sp., infectious diseases, epidemiology, Poland, 2012*

INTRODUCTION

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 2012 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 2012” for 2006-2012 (NIPH-NIH, CSI, Warsaw);
- legionellosis case reports from 2012 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).

RESULTS

In 2012, a total of 10 legionellosis cases were reported in Poland (8 cases of Legionnaires' disease and 2 cases of Pontiac fever), i.e. 8 and 18 individuals less compared to 2011 and median for 2006-2010, respectively (Tab. I). The incidence was 0.026 per 100,000 population. Having analyzed the incidence for 2011 and median for 2006-2010, it was 45% - 0.047 and 65% lower, respectively. Only sporadic cases were notified. Compared to the previous year (11), legionellosis occurred in lower number of provinces (6); the highest number of infections (3 in each province) was reported in kujawsko-pomorskie (incidence 0.143/100,000) and mazowieckie (incidence 0.057) provinces. Having considered the provincial distribution of cases, except for continuing trend of relatively slightly higher incidence in mazowieckie province, the lack of cases in śląskie province should be noted, in which three cases and outbreak were reported in 2011 and 2010, respectively. No legionellosis cases were registered in 10 provinces (Tab. I).

In 2012, 50% of cases were reported pursuant to the definition adopted for surveillance purposes as the confirmed cases (detection of *Legionella pneumophila* serogroup 1 antigen in urine). The criteria for probable case were met in the case of 5 individuals, including 2 cases of Pontiac fever. All cases which were classified as probable cases were confirmed by single high titre of antibodies.

The majority of cases were reported in third and fourth quarter of the year (4 and 3, respectively). The incidence in males (0.03 per 100,000 population) was

comparable to the incidence in females (0.02). Irrespective of the fact that infections occurred in the individuals aged 21-70, a typical trend of Legionnaires' disease is observed – the older individuals predominate as they are more susceptible to infections; the median age for 2012 was 51.5 years.

All of the notified infections were of sporadic nature. They were accompanied by pneumonia (except for Pontiac fever) and required hospitalization. According to the State Sanitary Inspection, two fatal cases due to legionellosis were registered in 2012 – 70-year-old male and 61-year-old female.

In the majority of cases notified in 2012, 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.

As many as 7 infections were acquired in the country, including one hospital-and one sanatorium-associated case. Two infections were linked to the travels abroad (one to Spain and one to Egypt) and one infection occurred in the driver while transporting the goods to the Netherlands.

Although legionellosis is detected in Poland relatively rarely, it is considered that this disease is much more prevalent. However, it is not differentiated from other forms of pneumonia due to sporadic laboratory testing for *Legionella* in Poland. In the period of 1987-2008, 17 infections associated with travel to Poland were reported in the EU countries. In the years 2012-2013, 13 hotels located in 7 different provinces in Poland were notified to ECDC as the possible source of infection for the foreigners who stayed in Poland.

Table I. Legionellosis in Poland in 2006-2012. Number of cases and incidence per 100 000 population (by date of registration), by province

Province	Median		2011		2012	
	2006-2010		Number of cases	Incidence	Number of cases	Incidence
	Number of cases	Incidence				
Poland	28	0.073	18	0.047	10	0.026
Dolnośląskie	-	-	1	0.340	-	-
Kujawsko-pomorskie	1	0.048	1	0.048	3	0.143
Lubelskie	1	0.046	2	0.092	-	-
Lubuskie	-	-	1	0.098	-	-
Łódzkie	-	-	1	0.039	1	0.040
Małopolskie	-	-	-	-	1	0.030
Mazowieckie	8	0.154	4	0.076	3	0.057
Opolskie	-	-	-	-	-	-
Podkarpackie	-	-	-	-	-	-
Podlaskie	-	-	2	0.166	-	-
Pomorskie	-	-	1	0.044	-	-
Śląskie	3	0.064	3	0.065	-	-
Świętokrzyskie	1	0.078	-	-	-	-
Warmińsko-mazurskie	-	-	1	0.069	1	0.069
Wielkopolskie	-	-	1	0.029	1	0.029
Zachodniopomorskie	-	-	-	-	-	-

SUMMARY AND CONCLUSIONS

In 2012, a significant decrease in legionellosis incidence compared to the previous year was observed in Poland. Furthermore, the infections were detected and reported in notably lower number of provinces than in 2011. The number of registered infections and incidence were also considerably lower in comparison to the median for 2006-2010. However, no changes of fundamental features of legionellosis epidemiological situation in Poland were determined.

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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