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## TETANUS IN POLAND IN 2013\*

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### ABSTRACT

Tetanus is an infectious disease which, despite the small number of cases is a permanent risk to unvaccinated people. The severity of disease is associated with high mortality especially in older age groups.

**PURPOSE OF THE STUDY.** The aim of the paper is to present epidemiological surveillance data tetanus in 2013.

**MATERIAL AND METHODS.** The source of the data are the individual case reports of tetanus sent to the Department of Epidemiology, NIPH-NIH and bulletin data “Infectious diseases and poisonings in Poland in 2013.

**RESULTS.** In 2013 number of recorded cases of tetanus was 14. Four cases of disease occurred in men and 10 in women. Among cases 13 people were over 69 years of age and among them 7 people died.

**SUMMARY AND CONCLUSIONS.** Severity of tetanus, despite the small number of annual cases leads to several deaths each year, particularly in the older age groups. This deaths could be prevented by vaccination.

**Key words:** *tetanus, surveillance, Poland, 2013*

### INTRODUCTION

Tetanus is an infectious disease that occurs in people who experienced different types of wound contaminated with soil, feces, or saliva containing tetanus spores. This applies particularly deep puncture wounds, but also burns, mashed wounds and cuts. Less often portal of entry are superficial wounds like abrasions. Sometimes the point of intrusion of spores into the body are chronic wounds such as tissue necrosis, ulceration associated with varicose veins or diabetic foot. A special and very dangerous variety of tetanus occurs in to children or their mothers in perinatal period. Such infection occurs during the perinatal period if the relevant rules of hygiene are not implemented. Neonatal infection is usually followed by cutting of the umbilical cord with dirty tool or subsequent contamination of the umbilical stump.

In Poland, for dozens of years, there was no neonatal tetanus but it is still a major problem in many countries of Africa and Asia. Tetanus is infectious, but not a contagious disease, ie. it is not transmitted from human to human. Due to the environmental source of infection tetanus vaccination protect only vaccinated individuals.

In Poland like in other countries with obligatory vaccination tetanus cases in children and adolescents are very rare. Though, in the older age groups recommendation of buster Td vaccination is often not respected and among people in those people there are some cases of tetanus with marked case fatality. The deaths usually occur among people over 60 years old.

In Poland tetanus prophylaxis is regulated by legislation:

1. Załącznik do Komunikatu Głównego Inspektora Sanitarnego z dnia 29 października 2012 r. w sprawie Programu Szczepień Ochronnych na rok 2013 (Dz. Urz. Ministra Zdrowia 2012, poz. 78)
2. Dz. Urz. Ministra Zdrowia 27.10.2011 w którym podano wiek dzieci do szczepienia podstawowego (1 r.ż – 3 dawki, dawka uzupełniająca 2 r. ż., szczepienia przypominającego 6, 14, 19 r.ż).
3. Rozporządzenie Ministra Zdrowia z den. 28.11.2005. które zawiera wykaz stanowisk pracy oraz szczepień ochronnych do wykonania pracownikom podejmującym pracę lub zatrudnionych na tych stanowiskach (Dz. U. z 2005 r., nr 250 poz. 2113).

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## THE PURPOSE OF THE STUDY

The aim of this paper is to present the data of epidemiological surveillance of tetanus in 2013, and to provide recommendations for prevention of tetanus.

## MATERIAL AND METHODS

The source of data are: forms of individual reports of tetanus cases sent to the Department of Epidemiology, NIPH-NIH, and bulletins "Infectious diseases and poisonings in Poland in 2013" and also the bulletin: "Immunizations in Poland in 2013. (Czarkowski MP et al. Warsaw 2014 NIPH-NIH and GIS) The article presents morbidity and mortality tables of tetanus cases geographical distribution of Disease occurrence, age and sex of the patients and the data from the individual forms relating to the portals of entry of the infection and the incubation period.

## RESULTS

In 2013 there were 14 reported cases of tetanus in eight provinces (Table I). One of them occurred in December 2012. In comparison with 2012. It was six cases less. As in the previous year, the highest incidence was in the Małopolskie (four cases) and Śląskie (three cases). The

In contrast to the previous year, there was no incidence among young adults. Age of the all patients was over 60 years. Among men, there were 4 cases, all in the group ages 70-79 and all ended with death., There were 10 women cases reported. One in the age group 60-69 years, three in the age group 70-79 years and six patients in the age of 80 or more years. In women there were 3 fatalities, all in the oldest age group. Thus, among the total of 14 reported cases there were recorded 7 deaths, which gives the case fatality of 50%. (Tab. II).

As in previous years, with the exception of 2012, a greater number of cases was reported in the rural areas (8) than in urban ones (6). This is a small difference

Table I. Tetanus in Poland in 2012 - 2013. Number of cases and incidence per 100 000 population by province

Province	2012		2013	
	case	incidence	case	incidence
Polska	19	0.049	14	0.036
1. Dolnośląskie	1	0.034	1	0.034
2. Kujawsko-Pomorskie	1	0.048	-	-
3. Lubelskie	-	-	1	0.046
4. Lubuskie	2	0.195	1	0.098
5. Łódzkie	1	0.040	-	-
6. Małopolskie	5	0.149	4	0.119
7. Mazowieckie	2	0.038	2	0.038
8. Opolskie	-	-	-	-
9. Podkarpackie	-	-	-	-
10. Podlaskie	1	0.083	1	0.084
11. Pomorskie	2	0.087	-	-
12. Śląskie	4	0.087	3	0.065
13. Świętokrzyskie	-	-	-	-
14. Warmińsko-Mazurskie	-	-	-	-
15. Wielkopolskie	-	-	1	0.029
16. Zachodniopomorskie	-	-	-	-

in absolute terms, but due to smaller population in the rural incidence among the rural population was twice as high as in the cities (Tab. III).

There has been marked seasonality. From June to August the number of reported cases was 8, and at the remaining months there were only 6.

Incubation period estimated by the reporting physicians was in four cases from 2 to 7 days, in the following 4 cases from 8 to 14 days, and in two cases it exceeded 21 days. In 2 cases, no information was obtained about the incubation period.

As the portals of infection in 4 cases puncture wound was reported, in three cases abrasion. In two cases, it was a cut and in 2 cases mashed wound. In one case, the wound was associated with varicose ulceration and in one with necrosis. In one case, the nature of the injury was not reported.

Regarding vaccination status of cases, in 10 cases, no information is given, and only one case, received a booster dose of tetanus.

Table II. Tetanus in Poland in 2013. Number of cases, incidence per 100 000 and deaths by age and sex

Age range	Males			Females			Total		
	case	incidence	deaths	case	incidence	deaths	case	incidence	deaths
0-19	-	-	-	-	-	-	-	-	-
20-29	-	-	-	-	-	-	-	-	-
30-39	-	-	-	-	-	-	-	-	-
40-49	-	-	-	-	-	-	-	-	-
50-59	-	-	-	-	-	-	-	-	-
60-69	-	-	-	1	0.043	-	1	0.023	-
70-79	4	0.425	4	3	0.204	-	7	0.290	4
80 i >	-	-	-	6	0.591	3	6	0.411	3
Total	4	0.021	4	10	0.050	3	14	0.036	7

Table III. Tetanus in Poland in 2013. Number of cases and incidence per 100 000 by sex in urban and rural population and deaths by voivodeship

Voivodeship	Males		Females		City		Country		Deaths
	case	incidence	case	incidence	case	incidence	case	incidence	
Polska	4	0.021	10	0.050	6	0.026	8	0.053	7
1. Dolnośląskie	1	0.071	-	-	-	-	1	0.113	1
2. Kujawsko-Pomorskie	-	-	-	-	-	-	-	-	-
3. Lubelskie	1	0.095	-	-	-	-	1	0.086	1
4. Lubuskie	-	-	1	0.191	1	0.155	-	-	-
5. Łódzkie	-	-	-	-	-	-	-	-	-
6. Małopolskie	1	0.061	3	0.174	1	0.061	3	0.175	1
7. Mazowieckie	1	0.039	1	0.036	1	0.029	1	0.053	2
8. Opolskie	-	-	-	-	-	-	-	-	-
9. Podkarpackie	-	-	-	-	-	-	-	-	-
10. Podlaskie	-	-	1	0.163	1	0.138	-	-	-
11. Pomorskie	-	-	-	-	-	-	-	-	-
12. Śląskie	-	-	3	0.126	1	0.028	2	0.193	2
13. Świętokrzyskie	-	-	-	-	-	-	-	-	-
14. Warmińsko-Mazurskie	-	-	-	-	-	-	-	-	-
15. Wielkopolskie	-	-	1	0.056	1	0.052	-	-	-
16. Zachodniopomorskie	-	-	-	-	-	-	-	-	-

Concerning post exposure prophylaxis 5 cases received tetanus toxoid, and in 9 cases no post-exposure prophylaxis was used.

13 reported cases of tetanus were identified on the basis of clinical symptoms. Bacteriological confirmation by culture of *Clostridium tetani* from wound specimen was obtained only in one case.

## SUMMARY AND CONCLUSIONS

The cases of tetanus are relatively rare in Poland, and only very rarely they involve children and young people, ie. age groups undergoing obligatory vaccinations. Also among the people in the older age groups who are professionally active in occupations for which they are provided vaccination, there were no cases.

Cases in 2013 occurred exclusively in late age groups. Only one infection occurred before the 70-th year of life. The need to explain a very high mortality rate, which stood at 50%. All four men died in the age group 70-79, and 3 out of the six women in the age group above eightieth year of life.

Most of these deaths could be prevented if we could convince the public that despite the fact that tetanus is

rare, it is a very dangerous disease that can and should be prevented by repeated booster every 10 years.

In the last several years in Poland cases of tetanus occurred mostly in adults, especially in the elderly, usually after the age of 60. These are the age groups not covered by the compulsory vaccination and having a very low vaccine coverage. In contrast to selected groups like soldiers and employees of the fire departments vaccination coverage of adults in Poland remains low. The primary care physicians should encourage patients to be vaccinated at the recommended intervals of 10-years, particularly of the people over 60 years of age, in whom course of tetanus can be particularly severe and can lead to death.

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