NATIONAL PUBLIC
HEALTH ORGANIZATION

Directorate of Epidemiological Surveillance and Interventions for Infectious Diseases

Department of Vaccine Preventable and Congenital Diseases

EPIDEMIOLOGICAL DATA FOR TETANUS IN GREECE, 2004-2020

(MANDATORY NOTIFICATION SYSTEM)

Key Points

Based on data for the period 2004-2020:

- The notification rate of the disease remains low.
- The disease affects mostly people belonging to the age group >65 years old.
- No cases of tetanus have been reported in newborns.
- Due to the severity of tetanus there is a need to maintain high vaccination rates in all age groups.

Tetanus is caused by *Clostridium Tetani*, a gram positive rod-shaped anaerobic bacterium, which can form spores. The bacterium and its spores are found in the soil, dust and in the feces of many animals. It can enter the human body through a break in the skin, i.e. trauma, burn or ocular coloboma. The acute symptoms of the disease are the result of the production of an exotoxin, called tetanospasmin. The most characteristic symptom is painful muscle spasms, starting from the head and neck and progressing to the body. Mortality ranges from 10 to 80% and it is higher among newborns and the elderly [1,2].

Time trend

During the period 2004-2020, the number of tetanus cases reported through the mandatory notification system was 91. The notification rate during the period 2004-2020 appeared between 0.02/100,000 population and 0.10/100,000 population (Figure 1). The mean annual notification rate for the period 2004-2020 was 0.05 cases per 100,000 population (mean number of reported cases per year: 5.35, total number of reported cases for 2004-2020: 91)

Age and gender distribution

During 2004-2020, the disease presented the highest frequency of occurrence in the age group >65 years old, with a mean annual notification rate 0.16 cases per 100,000 population. This notification rate is higher than that of the other age groups (5-14, 25-44 and 45-64), in which it did not exceed 0.04 cases per 100,000 population. No cases have been reported in children below the age of 4 years

old. The mean annual notification rate for men was equal to that for women (0.05/100,000 population).

Geographical distribution

During the period 2004-2020, the disease presented the highest mean annual notification rate in Aegean Islands – Creta (0.11/100,000 population) whilst slight lower was the notification rate in the geographical areas of Central Greece (0.08/100,000 population). The mean annual notification rate for the geographical area of Northern Greece and Attica was 0.04 cases/100,000 population and 0.02 cases/100,000 population respectively.

Vaccination coverage – Risk factors - Burden of disease

Among 91 reported cases during 2004-2020, the majority (58 cases – 63.7%) were not vaccinated. Only 10 cases reported vaccination against tetanus (4 with one dose of the vaccine, 2 with two doses of the vaccine, 1 with three doses of the vaccine while 4 cases had no information available regarding the number of doses given). Twenty-three (23) cases had no information available on the vaccination status. Especially in the age group >65 years old, the majority of the cases was not vaccinated (90%).

During the same period, 89 (97.8%) cases were hospitalized, whilst 42 cases (46.1%) presented complications, especially regarding the respiratory system. The outcome for tetanus is usually good. During the period 2004-2020, there were only 4 deaths in adults >61 years old.

Conclusions

The mean annual notification rate for the period 2004-2020 was slighter higher than the mean notification rate for the EU and EEA/EFTA countries for the year 2018 (0.02/100,000 population) [3]. Most reported cases are adults >65 years old, mostly non-vaccinated, which highlights the need for achieving high vaccination coverage in all age groups. To be noted that in adults who have been fully vaccinated against tetanus in childhood, a booster dose of Td or Tdap is recommended every 10 years, by the National Immunization Program for adults.

References

1. Tiwari TS. Tetanus. In: Control of communicable diseases manual, 20th edition. Heymann DL ed. American Public Health Association 2015; p. 607-613.
2. American Academy of Pediatrics. Tetanus In: Kimberlin DW, Brady MT, Jackson MA, Long SS, eds. Red Book: 2018 Report of the Committee on Infectious Diseases. 31st ed. Itasca, IL: American Academy of Pediatrics; 2018: p. 793-798.
3. European Centre for Disease Prevention and Control. Tetanus Annual Epidemiological Report for 2018. Stockholm: ECDC; 2020. Available from: https://www.ecdc.europa.eu/sites/default/files/documents/Tetanus_AER_2018_Report.pdf

Figure 1. Time trend of tetanus reported cases and annual notification rate per 100,000 population in Greece, 2004-2020

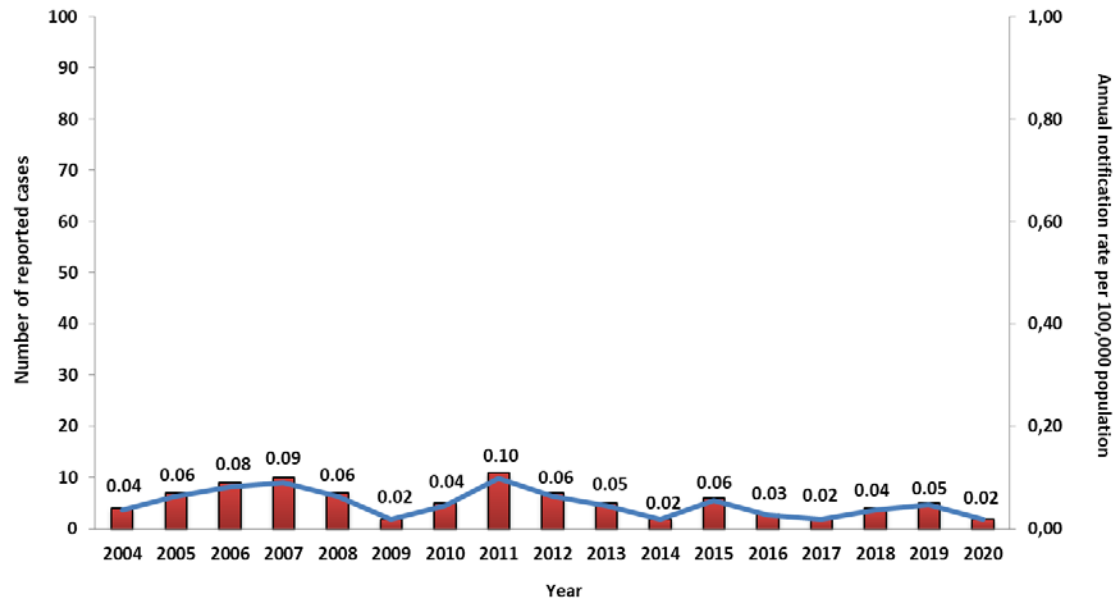

Figure 2. Age distribution of the mean annual notification rate of tetanus (cases/100,000 population), Greece, 2004-2020 (N=91)