Epidemiological Characteristics of Tularemia in Kosova in the Period 2006-2011

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ABSTRACT

Introduction: Tularemia is an important zoonosis in Kosovo. The first cases of tularemia in Kosovo were reported in 1999 among civil population in the west part of Kosovo. Tularemia has become an important problem in Kosova after 1999. Aim: The aim of this study was to analyze the frequency and distribution of Tularemia in Kosovo in the period from 2006 to 2011, propose measures and activities for prevention and control of the disease. Material and method. In this descriptive, retrospective study, we used official reports on infectious diseases from National Institute of Public Health of Kosova (NIPHK), as well as epidemiological surveys. The data collected were analyzed and the corresponding statistical parameters were tested with SPSS for the level of significance for P<0.01 and P<0.05. Results and Discussion: The morbidity rate over the study period ranged from 0.38 (2011) to 11.26 (2010) per 100000 inhabitants. We found statistical significance between years for the level of P<0.00001. (X2-test=387.5; DF=5; P<0.0001). The majority of tularemia cases occurred in female (59%) with statistical significance for P<0.001 (X2-test=16.07; DF=1; P<0.001) The peak of cases in age group 20-40 years, with 242 cases or 48%, with statistical significance for the level of P<0.0001 (X2-test=253.14; DF=3; P<0.001) The main route of human infection is consumption of no safety water from wells (50%). The majority of tularemia cases occurred in female in Kosovo with 59% of observed cases while in a study in Central Anatolia region 54.7% were female. Conclusion: Kosova is an endemic zone of this disease since 1954 where the first cases were registered. Tularemia is a zoonosis, so in order to avoid human infections it is very important to implement measures well as perform public health education activities.

Key words: Tularemia, morbidity, Kosova.
3. MATERIALS AND METHODS

In this descriptive, retrospective study, we used official reports on infectious diseases from National Institute of Public Health of Kosova (NIPHK), as well as epidemiological surveys.

All ambulances and medical centres (regional and municipalities level), were obliged to fill in special reporting forms every week to report aggregated and individual data of a number of diseases, including tularemia, to the regional IPH which, subsequently, passed them to the NIPHK.

The ELISA was performed as the antibody screening assay. The data collected were analyzed and the corresponding statistical parameters were tested with SPSS for the level of significance for $P<0.01$ and $P<0.05$.

4. RESULTS

In the period 2006-2011, there were 504 tularemia cases and the number of cases has changed from through years. The morbidity rate over the study period ranged from 0.38 (2011) to 11.26 (2010) per 100000 inhabitants. We found statistical significance between years for the level of $P<0.0001$. ($X^2$-test=387.5; DF=5; $P<0.00001$) (Table 1 and Figure 1).

5. DISCUSSION

Tularemia is an important zoonosis in Kosovo. The first cases of tularemia in Kosovo were reported in 1999 among civil population in the west part of Kosovo. Tularemia has become an important problem in Kosovo after 1999 (4, 7). The majority of tularemia cases occurred in female in Kosovo with 59% of observed cases while in a study in Central Anatolia region 54.7% were female (5). In Sweden, an overrepresented among males has been attributed to their more frequent outdoor professional and leisure activities (6).

According to WHO Guidelines on Tularemia (6), the age-related incidence rate of tularemia is unknown, in Kosovo; the infection occurred in different age groups, and peak of cases was found in 20–40 year age group, with 242 cases or 48%.

It was characteristic that people in affected regions reported especially field, forest, and domestic mice.

![Figure 1: Incidenca tularemia cases in Kosova, 2006-2011](image1)

![Figure 2: Tularemia cases Kosovo, 2006-2011, by gender](image2)

![Figure 3: Tularemia cases at Kosovo, 2006-2011, by occupation](image3)

![Figure 4: Tularemia cases by route of transmission](image4)
In most countries where tularemia is endemic, the disease is seasonal; its incidence seems to be highest during late spring, the summer months and early autumn (Olsuiev, 1977; Hayes et al., 2002; Tärnvik et al., 2004) (6).

After two outbreaks (1999, 2001), in following year, only sporadic cases were registered. During 2010 were registered high number of cases (237), but the outbreak was not announced, because here were no epidemiological link between cases.

As almost all patients suffered from the oropharyngeal tularemia with fever and a unilateral cervical lymph node enlargement as the leading symptoms, obviously the main route of infection was the alimentary ingestion of F. tularensis.

Unsafe food and water seem to be the most likely risk factors for an infection.

Housewives and farmers have been the most affected occupational groups; this is also reflected by the gender distribution as about 59% females were diseased with tularemia. A proportion of about 20% of children and pupils have got infected. This shows that infection occurs through occupational exposure and farm workers are predominantly men belonging to this age group.

In addition to occupational exposure, an important mode of transmission in Kosovo was consumption of no safety water from wells, and no safety food. Although other infectious diseases may have an even higher impact on public health in Kosovo.

6. CONCLUSION

Kosova is an endemic zone of this disease since 1954 where the first cases were registered. The main reason for ongoing activity of the disease seems to be the still bad sanitary conditions, especially in rural areas of Kosovo.

The case detection is good but a delay of transferring suspected cases could be improved

The large number of tularemia cases and seropositive livestock poses a very serious problem for Kosova.

Tularemia is a zoonosis, so in order to avoid human infections it is very important to implement measures well as perform public health education activities.

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