Badgers as a potential source of bovine tuberculosis – first studies in Poland

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INTRODUCTION

Since 2009, Poland has been recognized as a country officially free of bovine tuberculosis (BTB). However, new outbreaks are each year quoted. In many countries it has been shown that badgers (Meles meles) are a vector of Mycobacterium bovis/caprae and a source of bovine tuberculosis for many domesticated species, mainly for cattle. The aim of the presented study was to determine, for the first time in Poland, the occurrence of tuberculosis in badgers in areas where the disease occurs in cattle. Tissue samples were examined by classical microbiology methods, mycobacteria growth indicator tube (MGIT), and real time PCR. A total of 155 samples from 31 badgers were examined. In any case Mycobacterium bovis/caprae infection has not been diagnosed. This indicates that badgers probably are not a vector of bovine tuberculosis in Poland.

RESULTS AND DISCUSSION

A total of 155 samples from 31 badgers were examined. In studies of the organs no anatomo pathological changes have not been diagnosed. This indicates that badgers probably are not a vector of bovine tuberculosis in Poland.
individuals at a density of 1.3 to 5.9 individuals/10 km². Badgers are usually wild predators. In many countries, including Poland, this species has artificially adapted to changing living conditions, with their diet and behavior. From the forest areas the badgers moved to urban areas, abandoned buildings, backyard gardens and pastures considered as the most common source of BTB in wild animals in Europe [2]. The role of badgers in the spread of bovine tuberculosis in different European countries is variable. Countries with a particularly high degree of isolation M. bovis/caprae from badgers are England, Wales, Ireland, France and Spain [3, 4, 5, 6]. Currently in Spain, wildlife monitoring is ongoing and the positive rate among the badgers between 2006 and 2013 is estimated at 12–15%. In Portugal, a study was conducted to determine the frequency of M. bovis occurrence in 11 species of wild animals. The results showed high prevalence of M. bovis in wild boars (21.4%), red foxes (26.9%), red deer (38.3%) and mongooses (20.0%) [7]. In Poland up to this time BTB in wild species has been identified only in wild boars (Sus scrofa) and European bison (Bison bonassus) [8].

In many countries the results of the study indicate the indisputable link between BTB infected badgers and cattle herds within a radius of 1 km from the site of the badgers shootings [4]. The problem of maintaining a permanent reservoir of M. bovis among wild animals is noticeable throughout the world. Proof of this thesis may be the result of New Zealand research, where the possums became the main reservoir of BTB [9]. In the Polish conditions the badgers habitat and the area of their feeding still remain in forest areas, with minimal contact with cattle. It seems that this is the main cause of the lack of transmission of M. bovis/caprae between badgers and other species of domestic animals, mainly cattle. Similar results were obtained in Slovenia, where M. bovis was not found in any of the tested badgers, and a positive result was found only in fallow deer (Dama dama) [10].

In summary the present studies indicate that badgers not represent M. bovis/caprae reservoir in western part of Poland. It is a strictly protected species of relatively small density. This does not oblige the badgers to seek new habitats and feeding areas. It means that BTB reservoir among wild animals in Poland remains wild boars and European bison.

REFERENCES