

Short notes

Ticks attacking domestic dogs in the area of the Rymanów district, Subcarpathian province, Poland

Paulina Kilar

Veterinary Clinic in Rymanów; E-mail: paula.ki@poczta.fm

ABSTRACT. Domestic dogs in Poland are attacked by five species of ticks. The present study shows results of research on species of ticks, their intensity and prevalence of infection in the domestic dogs in the district of Rymanów (Subcarpathian province, Poland). Local research was conducted from 25 August 2005 to 27 October 2006 on 82 randomly selected dogs in the veterinarian centre in Rymanów. Collected ticks were put into tubes with 70% ethyl alcohol. Collected and full up ticks were examined straight after being taken out of the preserving liquid. Stereoscopic microscope for species identification was used. The study revealed that domestic dogs in the Rymanów district are hosts for two species of ticks from the Ixodidae family: *Ixodes (Ixodes) ricinus* (Linnaeus, 1758) and *Ixodes (Pholeoixodes) hexagonus* Leach, 1815. Only one dog was infected with both tick species simultaneously. The dogs were attacked mainly by females. Ticks usually attached to such places as the neck, ear conches or groin. In general, the prevalence of ticks infestation on domestic dogs was 48.78 %; *I. ricinus* prevalence was 47.56 %, whereas *I. hexagonus* – 2.43 %. On the basis of obtained results it can be claimed that *I. ricinus* is more prevalent in the Rymanów district than *I. hexagonus*, therefore the domestic dogs are more frequently attacked by this species of ticks.

Key words: ticks, dogs, prevalence, Poland

Introduction

In Poland domestic dogs are mainly attacked by 5 species of ticks: *Ixodes ricinus*, *I. hexagonus*, *I. crenulatus*, *I. rugicollis* and *Dermacentor reticulatus* [1,2]. The incidence of tick-borne diseases in humans and domestic and farm animals is growing by year, sometimes resulting in demise. Despite so many cases of diseases whose reservoirs and vectors are various species of ticks, the issue is still little known and requires further research in the scope of epidemiology and epizootiology.

The study presents results of research on species of ticks and intensity and prevalence of their attacks on domestic dogs in the district of Rymanów (Subcarpathian province, Poland).

Material and methods

Ticks were collected from 82 randomly selected dogs in the veterinarian centre in Rymanów from 25 August 2005 to 27 October 2006. The dogs came from the following towns and villages in the Rymanów district: Wróblík Królewski, Wróblík

Szlachecki, Rymanów, Rymanów Zdrój, Posada Górna, Klimkówka, Bałucianka, Królik Polski, Bzianka, Milcza, Zmysłówka. The examination included a thorough search of the animals for ticks, particularly at the sites where ticks tend to attach most frequently (ears, neck, groin, the base of tail, anus area). The collected ticks were preserved in 70% ethanol.

To determine species of the collected ticks the tick identification key for Poland was used [1]. The examination was performed using stereoscopic microscope. Some specimens required additional detailed investigations. They were macerated and processed for light microscopy.

Results

Presence of ticks was detected in 40 out of 82 examined dogs in the district of Rymanów. The parasites belonged to 2 species: *Ixodes (I.) ricinus* (Linnaeus, 1758) and *Ixodes (Ph.) hexagonus* Leach, 1815 (Table 1). The dogs were mainly attacked by females. The most common sites of tick attachment were: the neck, ear conches, groins.

Table 1. Prevalence and intensity of the ticks infestation on domestic dogs in the area Rymanów district

Town	Number of examined dogs	Number of infected dogs	Prevalence (%)	Number of infected dogs	<i>Ixodes ricinus</i> Prevalence (%)	Intensity of infection	Number of infected dogs	<i>Ixodes hexagonus</i> Prevalence (%)	Intensity of infection
Bałucianka	4	3	75	3	75	1–11	0		
Bzianka	1	1	1		3		1	100	3
Klimkówka	5	1	20	1	20	9	0		
Królik Polski	7	2	28.57	2	28.57	1–3	0		
Milcza	2	0							
Posada Górna	10	3	30	3	30	5–35	0		
Rymanów	32	17	55	17	55	1–11	0		
Rymanów Zdrój	14	11	79	11	79	1–7	0		
Wróblík Królewski	3	2	67	1	33.33	7	1	33.33	22
Wróblík Szlachecki	2	0							
Zmysłówka	2	0							
Total	82	40	48.78	39	47.56		2	2.43	

Occurrence of *I. hexagonus* was found in villages Bzianka and Wróblík Królewski; 3 nymphs, 21 females and one male were collected.

The presence of *I. ricinus* was detected in the villages Bałucianka, Bzianka, Klimkówka, Królik Polski, Posada Górna, Rymanów, Rymanów Zdrój, Wróblík Królewski; 153 female and 58 male ticks were collected.

In three villages, Milcza, Wróblík Szlachecki and Zmysłówka, the examined dogs were not infected with ticks. In the village Bzianka two tick species simultaneously parasitized one dog.

Altogether, the prevalence of infestation amounted to 48.78%. Prevalence of *I. ricinus* was 47.56 %, whereas *I. hexagonus* – 2.43 % (Table 1).

Discussion

The study confirmed that the tick species *Ixodes ricinus* commonly parasitizes domestic dogs in Subcarpathian province. Ziemiańska's study [4] carried out in the vicinity of Miejsce Piastowe (Subcarpathian province) revealed prevalence of *Ixodes ricinus* infection at the level of 44.18%, and of *Ixodes hexagonus* – at 2.32 %. Bilka-Spisak [3] in her study performed in Wadowice region (Lesser Poland province) found the prevalence of *Ixodes ricinus* amounting to 44.18%, and the prevalence of *Ixodes hexagonus* to 5.9%. The results of studies conducted in the Rymanów region correspond with the abovementioned findings.

However, the results of research carried out by

Gierczak [5] in the vicinity of Przemyśl (Subcarpathian province) differ considerably from the above values because 60% of the collected ticks were *Ixodes hexagonus*, and 31% *Ixodes ricinus*. Moreover, the author found that domestic dogs in the Przemyśl region are also attacked by *Ixodes rugicollis*. Her research enabled detection of new distribution of *Ixodes rugicollis* in Poland. This tick species was not found in the Rymanów district.

Dermacentor reticulatus is the species which attacks domestic dogs in Poland. It most frequently occupies the northeastern part of our country, but its localization is also known in the south of Poland. Studies of Siuda et al. [6] performed in the south of the Subcarpathian province detected it in Huzele near Lesko, Stare Sioło and Ustrzyki Dolne. The present study did not confirm occurrence of this tick species in the district of Rymanów, although the research was conducted in the period of the tick activity.

The dog tick *Rhipicephalus sanguineus* [7–9] may have been transferred from the south of Europe to Poland. The species was not detected in the Rymanów district.

Both in urban and rural areas of high forestation rate, domestic dogs were attacked by exophilic ticks *I. ricinus*. In rural areas with low forestation rate the endophilic tick species *I. hexagonus* was detected on dogs more frequently.

The study showed lower tick prevalence in urban areas in relation to the rural regions. It results from the fact that domestic animals in the country have

greater access to the natural habitat of ticks.

The conducted research revealed two new locations of tick species *Ixodes hexagonus* in the Subcarpathian province in the villages Bzianka and Wróblík Królewski in the district of Rymanów.

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