

Seroprevalence of *Toxoplasma gondii* in domestic pigs and wild boars from different district of Poland

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Abstract

Domestic pigs and wild boars are considered as an important reservoir of *T. gondii*. Serological results confirmed the widespread exposure of these two species of animals to the parasite; however different prevalences were observed in different geographical regions. Consumption of raw or undercooked infected meat may result in acute toxoplasmosis in humans.

Epidemiological data obtained in Poland have shown that toxoplasmosis is detectable in urban pigeons, goshawks, polar foxes, sheep, goats and canines (Kopczewski et al. 2001, Michalski and Platt-Samoraj 2001, Śmiełowska-Łoś et al. 2003, Piasecki et al. 2004).

In some districts of Poland seroprevalence in humans achieved 60% (Umiński et al. 1994, Sroka et al. 2003). Additionally, wild boars are widely distributed and every year approximately 50 000 animals are hunted.

The aim of the study was to survey the prevalence and epidemiology of *T. gondii* infection in domestic pigs and wild boars in different regions in Poland. In two regions toxoplasmosis was noticed among abattoir workers as well as among goats and sheep.

To detect specific anti-*T. gondii* IgG antibodies the "ELISA *T. gondii* Serum Screening" KIT was used (Institute Porquier, Paris, France). According to manufacturer's instruction serum is considered positive when a S/P% ratio higher than 50% is observed.

The study was carried out on 141 domestic pigs serum samples obtained from Lubelskie district, and

revealed that seroprevalence of *T. gondii* achieved 36.2%. On 96 pig serum samples obtained from Warmińsko-Mazurskie district, only 14.6% were *T. gondii* positive. Serum samples obtained from Kujawsko-Pomorskie district revealed positive reaction in 16.4%, and from Mazowieckie district in 20% of examined samples.

The study performed on wild boar serum samples revealed that of 84 samples obtained from Lubelskie district, 29.8% were *T. gondii* positive, while of 96 serum samples obtained from Warmińsko-Mazurskie district, 34.4% were positive.

In summary, our work revealed:

- – the usefulness of Institute Porquier ELISA KIT to detect anti-*T. gondii* antibodies in domestic pigs and wild boars,
- – a high seroprevalence of anti-*T. gondii* antibodies in the examined animals species, which indicated widespread exposure of animals to this parasite,
- – that wild boars meat should be taken into account as a risk factor for persons who prefer consumption of raw or undercooked meat.

References

- Kopczewski A., Saba L., Nozdryn-Potnicki Z., Sławoń J., Zon A. 2001. Toxoplasmosis in polar foxes. *Medycyna Weterynaryjna* 57: 880-882.
- Michalski M., Platt-Samoraj A. 2004. Entent of *Toxoplasma gondii* invasion in goat and sheep from Olsztyn region. *Medycyna Weterynaryjna* 60: 70-71.
- Piasecki T., Śmiełowska-Łoś E., Wieliczko A. 2004. Prevalence of antibodies to *Toxoplasma gondii* in urban pigeons and goshawks, *Medycyna Weterynaryjna* 60: 72-75.

Sroka J., Zwoliński J., Dutkiewicz J. 2003. The prevalence of anti-*Toxoplasma gondii* antibodies among abattoir workers in Lublin. *Wiadomości Parazytologiczne* 49: 47-55

Śmiełowska-Łoś E., Rypuła K., Dzimira S. 2003. Studies

on congenital toxoplasmosis in canines. *Medycyna Weterynaryjna* 59: 141-145.

Umiński J., Cisak E., Chmielewska-Badora J., Zwoliński J. 1994. Toksoplazmoza u ludzi i zwierząt. *Medycyna Weterynaryjna*, 50, 589-591.