

## Summary

Toxoplasmosis is one of the most prevalent protozoan diseases in the world. Some regions declare up to 80% presence of antibodies in human population. The prevalence in Czech Republic varies depending on the region between 25%-50%.

The cause of this disease is protozoan *Toxoplasma gondii*. The final host is cat and other felines in which GIT the sexual cycle of this parasite takes place. Human together with other 350 animal species is the intermediate host. In those individuals parasite forms so called tissue cysts in which it could persist for its entire life.

The infection is acquired through undercooked meat or organs of the intermediate host, manipulation with meat or organs of infected individuals, eating of food contaminated with cat feces and/or through contact with contaminated outside environment.

Infection proceeds without any symptoms in 90% of immunocompetent patients. 10% patients display sometimes very various clinical symptoms. The disease is divided into different forms according to prevailing symptoms.

This disease presents a great danger to immunosuppressed patients and pregnant females. In the first group it can cause a serious damage of CNS (Central Nervous System) and in some parts of the world it is one of the most frequent death causes in HIV positive patients. In pregnant females it can cause fetal infection and further variously extensive damage of the fetus or abortion.

Vaccination does not exist and so the preventive measures consist of thorough thermal preparation of food and observance of personal hygiene.

In our study we paid attention to prevalence of toxoplasmosis in Pilsen region and some of its epidemiological aspects.

The serums of males, females and children with clinical diagnosis were tested. Most of the serum samples are from females examined as a part prenatal screening.

All of the serum samples were tested with methods of indirect diagnostics for antibodies in serum - complement fixation reaction (CFR), determination of specific immunoglobulins IgA, IgG and IgM with ELISA reaction.

Total number of 4080 males (1508 boys under 18 yo) and 24742 of females (1765 girls under 18 yo) were tested.

### Conclusions:

1. CFR or detection of IgG immunoglobulins can be used for prevalence determination of antibodies in population. Spectrum of laboratory tests needs to be extended

of specific immunoglobulins IgM and IgA detection even in routine laboratories. Diagnostic sets must be approved and recommended by National Reference Laboratory.

2. Interpretation of serological finding must be performed by a specialist.
3. Toxoplasmosis infection is the most prevalent protozoan disease in Czech Republic. The prevalence of antibodies is higher in female population.
4. Sequential decrease of disease cases and decrease of high antibodies titre occurs since the year 2000.
5. Greater attention must be paid to naming and division of particular forms of disease.
6. No significant difference was proved in antibodies presence in city and country population.
7. Disease embodies certain season prevalence with higher occurrence in first months of the year. There is a second season peak during the autumn months in female population.
8. Theory, that nowadays the most frequent way to acquire this infection is through uncooked meat, has not been confirmed. The contact with animal and soil prevails. Unfortunately large number of patients do not state any of those given infection sources.
9. Targeted trails are essential for revelation of the main infection sources and resulting preventive measures. The question remains if this task is possible to realize in current health service situation.
10. Due to high number of latent forms of disease, it is essential to pay more attention to toxoplasmosis in pregnancy and prevent the fetal damage.

Key words: Toxoplasmosis and its importance, clinical forms, laboratory diagnostics, antibodies prevalence in male and female population, mechanisms of disease transmission.