Immune response in farm animals infected or immunised with bacteria of *Chlamydia sp.* and *Chlamydophila sp.* genus*

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Abstract

Bacteria from genera *Chlamydia* (*Ch.*) and *Chlamydophila* (*Chl.*) are very pathogenic and may infect humans and animals. They also may cause latent infection, especially in animals. In this paper we discuss the non-specific and specific cellular and humoral immunity in farm animals, after infection or immunisation with *Chlamydia sp.* and *Chlamydophila sp.* bacteria. It has been shown, that the infection or immunisation with the microorganisms influenced the activity of polymorphonuclear cells (PMN) and mononuclear cells (MN) in the process of phagocytosis. It has also been shown that the bacteria influenced the amount and activity of lysozyme, activities of myeloperoxidase and lysosomal enzymes. Infection or immunisation with the microorganisms was demonstrated to affect numbers of lymphocytes T and B and those of their subpopulation as well as the activity of cytokines and levels of serum and secreted immunoglobulins. The changes were detected just a few hours after infection or immunisation and persisted for a few days to a few decades.

Key words: *Chlamydia sp.*, *Chlamydophila sp.*, immunity

Chlamydia and chlamydophila represent Gram-negative, intracellularly residing bacteria which belong to the domain of *Bacteria*, class of *Chlamydiae*, *Chlamydiae* phylum and *Chlamydiales* order. Characteristic features of the germs include a unique developmental cycle of 48-72 hours, with two morphological forms; the elementary body (EB) as the infectious form and the reticulate body (RB) (Pawlikowska 2003). The germs are ubiquitously widespread in the nature and the first notes on the diseases evoked by them originated from China, 5,000 years ago, and from the papyrus of Ebers, judged to come from 3,000 years ago, where trachoma was described for the first time (Pawlikowska 2003). The germs are noted in humans and other vertebrates (i.a. cattle, sheep, horses, goats, pigs, dogs, cats, gazelles, coals, rabbits, bears, rodents, opossums, ferrets) as well as in over 140 species of birds and invertebrates (molluscs, hydrozoans, arachnids, isopodans, crabs) (cit. Pawlikowska 2003). Antibodies reactive to the germs were detected also in small rodents (moles, mice, shrews, water shrews, field voles) (Cislakova et al. 1999), boars (Giovannini et al. 1988) and wild ruminants (red deer, mufflon, fallow deer, Pyrenean ibex)