Prevalence of antibodies against Chlamydophila abortus and Coxiella burnetii in goat herds in Poland


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Abstract

An epidemiological study was carried out to determine the herd prevalence of Chlamydophila abortus and Coxiella burnetii antibodies in goats covered by a milk recording program in Poland. The survey took place in 2007 and 48 herds located in different parts of the country were involved. A representative sample from each herd was taken by a simple random sampling allowing to detect seropositivity of a herd on a 95% level of confidence. In total 918 goats were tested for specific antibodies against both germs with the use of enzyme-linked immunosorbent assays. In addition, history of reproductive failures was recorded in these herds. The survey revealed that the herd prevalence of C. abortus was 4.2% (2 herds) while no C. burnetii antibodies were found. Abortions were reported to be a problem in 80% of herds while repeating estrus was encountered in 46% of herds. Reproductive failure concerned two seropositive herds as well. Since the germ is present in the population, it has to be taken into consideration in diagnostic process. Nevertheless, the results of the present study indicate that C. abortus infection occurs infrequently in Polish goats. As no antibodies against C. burnetii were detected in the screened sample the risk of goat-to-human transmission of both bacteria in Poland seems to be very low.

Key words: Coxiella, Chlamydophila, enzootic abortion, Q fever, goat, abortion

Introduction

Chlamydophila abortus and Coxiella burnetii are both intracellular bacteria of a worldwide distribution and great importance for ruminants’ health. Both germs cause different diseases – ovine enzootic abortion and Q fever, respectively. However, main clinical manifestation of each infection is reproductive failure, mostly abortion (Nietfeld 2001). C. abortus infection is typical for small ruminants. C. burnetii has been detected in many mammalian species, but cows, sheep and goats remain its main reservoir. Both diseases pose danger for public health. Although much more cases of Q fever are diagnosed in humans, recently also as epidemics (Panaiotov et al. 2009), abortions in pregnant women caused by C. abortus have also been reported sporadically (Pospischil et al. 2002, Meijer et al. 2004). Q fever is also an important threat for people who work with ruminants (Hatchette et al. 2001, Whitney et al. 2009). Moreover, the presence

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