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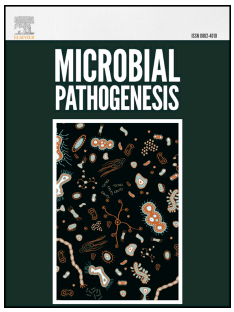

Molecular and serological data supporting the role of Q fever in abortions of sheep and goats in northern Egypt

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Molecular and serological data supporting the role of Q fever in abortions of sheep and goats in northern Egypt

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Abstract

Q fever is a worldwide zoonotic disease, caused by *Coxiella burnetii* (*C. burnetii*), an obligate intracellular bacterium. The epidemiological data about the Q fever situation in Egypt is limited.

The present study investigated the seroprevalence of Q fever among small ruminants in some localities in the northern Egypt and reported the shedders using specific real-time PCR (Rt-PCR). A total of 190 sera and vaginal swabs (110 sheep and 80 goats) were collected from aborted cases. Indirect ELISA was used to detect specific antibodies against *C. burnetii*, and Rt-PCR was used to detect DNA in the shedder animals. The study revealed that infection was significantly higher in sheep (22.7%) than in goats (12.5%) ($p < 0.05$). The Menoufia and Gharbia governorates had 20% seropositive animals while Qalubia and Alexandria had 15% and 17.5% seropositive animals, respectively. Using a Rt - PCR assay, *C. burnetii* was detected in 33.6% and 16.3% of sheep and goats, respectively. The findings of the study demonstrate that Q fever may be enzootic among small ruminants and distributed in the northern Egyptian Governorates. Further studies are needed in different regions to gain better understanding of the epidemiology of Q fever all over the country and to develop an appropriate preventive strategy for human and animals.

Keywords: Q fever, ELISA, Rt-PCR, small ruminants, Egypt

Introduction

Q fever is worldwide and highly infectious zoonotic disease, caused by *C. burnetii*. *C. burnetii* is an aerobic, intracellular, gram-negative bacterium which affects various domestic animal species [1, 2]. The ruminants are considered the main reservoir for the bacteria. *C. burnetii* is responsible for reproductive disorders in infected animals, including abortions that generally occur at the end of gestation, delivery of weak or dead offsprings, endometritis and infertility [3, 4].