

Q FEVER SEROLOGY AND PREGNANCY OUTCOME IN WOMEN EXPOSED TO LIVESTOCK ANIMALS

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Background and Aims: Q-fever is a bacterial zoonosis caused by *Coxiella burnetii*. Cows, goats, and sheep are the primary animal reservoirs and human infection occurs by inhalation of aerosols from animal birth products (Fournier et al 1998; Bosnjak et al 2010; Walsh MG 2011).

Pregnant women may, when infected, experience spontaneous abortion, preterm delivery, oligohydramnion, growth retardation and intrauterine fetal death (Carcopino et al 2009).

Methods: The Danish National Birth Cohort collected blood samples and interview data from 100.418 pregnant women between 1996-2002 (Olsen et al 2001). This study sampled 200 pregnant women with occupational exposure to domestic animals (veterinarians and female farmers), 200 women with domestic exposure (women living on farms with dairy cattle and/or sheep) and a random sample of 500 controls.

All samples were screened for antibodies against *C. burnetii* in a commercial enzyme-linked immunosorbent assay (ELISA). Samples positive either for IgG or IgM antibodies in the ELISA were confirmed with an immunofluorescence (IFA) test.

Results:

Reporting the IFA results, the proportion of women with serologic evidence of Q fever was significantly higher in the group with occupational exposure to livestock (19.1%, OR: 39.0; 95%CI : 11.9-128.4) as well as in the group with domestic exposure to livestock (11.0%, OR: 20.5; 95%CI: 6.1-69.2) when compared to pregnant women from the reference group (0.6% IFA positive).

However, the risk of spontaneous abortion was not higher among women with occupational exposure (0.52%, OR: 0.13; 95%CI: 0.02-1.05) nor among women domestically exposed (1.5%, OR: 0.41; 95%CI: 0.12-1.34).

Conclusions: These findings suggest that veterinarians, farmers and other people exposed to livestock, in this case dairy cattle and sheep, experience greater risk of *C. burnetii* infection, but this study did not find any association between exposure and spontaneous abortion. However, an effect on early pregnancy loss cannot be detected in this design.

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