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Seroprevalence and molecular epidemiology of *Coxiella burnetii* in Northern Ethiopia, 2018

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Introduction: *Coxiella burnetii* is a gram-negative intracellular pathogenic bacterium which causes Q fever, a worldwide zoonotic disease. Q fever is a highly neglected disease in Ethiopia and less emphasis is given for surveillance of this disease. There was no any study conducted to detect the presence of this disease on the Northern part of Ethiopia. This study was aimed to investigate *C. burnetii* infections from five animal species and humans from Tigray, Northern Ethiopia.

Materials and methods: Samples were collected and their sera tested for IgG antibodies against phase I and II *Coxiella burnetii* antigens by enzyme-linked immunosorbent assay (ELISA). A FRET-qPCR targeting *ompA* gene was also developed to detect *C. burnetii* DNA in bovine milk samples and in blood samples from animals and humans.

Results: Seropositive cattle (60/180; 33%), goats (71/220; 32%), humans (89/300; 29.6%) and pigs (8/150; 5.3%) were found, while dogs (0/178; 0%) and cats (0/122; 0%) were seronegative. Seropositivity in humans was associated with increasing age, but there was no gender difference. DNA was amplified from ten milk samples (10/210, 4.7%), while none of the blood samples were positive. The sequences these amplicons were identical to those of the *ompA* gene of the universal *C. burnetii* RSA 493 strain and other strains from Ethiopia.

Conclusions: The current findings from this study indicate that *C. burnetii* is endemic in Ethiopia and therefore human and animal health workers should be aware of the possibility of infections and the occurrence of outbreaks of Q fever.

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