Coxiella burnetii associated placental lesions and infection level in parturient cows

Cotyledons (n=170) from dairy cattle were analysed for Coxiella burnetii by real-time (rt) PCR targeting the IS1111a and icd genes. Positive cases (n=90) and a random selection of negative cases (n=20) were examined by histology, immunohistochemistry and, if infection level was high, by fluorescence in situ hybridisation. PCR results were compared to bulk tank milk (BTM) antibody levels. Placental infection was detected in cows from herds at all BTM antibody levels. However, the likelihood of placental infection was generally higher in herds with intermediate or high BTM antibody levels than in herds with low antibody levels. Histological examination revealed a range of mostly mild cotyledonary changes; C. burnetii infection was only rarely associated with inflammation. This may explain why bovine Q fever is usually not clinically apparent. Nevertheless, infected cattle will shed C. burnetii at calving and this can occur even in herds without BTM antibodies.

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