

Genomic Detection of *Coxiella burnetii* in Cow's Milk Samples of Lorestan Province based on *IS1111* transposon Gene

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ABSTRACT

Background and Aim: The present study was conducted with the aim of molecular search for *Coxiella burnetii* in raw milk samples collected from cows of Lorestan province.

Materials and Methods: This is a cross-sectional and descriptive study in which 200 milk samples were randomly collected from the herds of traditional cattle farms belonging to two cities (Khorramabad and Poldakhtar) of Lorestan province. Collecting milk samples and recording the age of animals was done in the winter of 1400. The process of DNA extraction from all milk samples was also done. Then, Nested-PCR reaction was used to detect *C. burnetii* based on the *IS1111* transposon gene. Also, SPSS software and Chi-square method were used for statistical analysis.

Results: The results obtained from amplification of the *IS1111* transposon gene showed that 5% (95% CI: 0.7-55%) of the milk samples were positive for *C. burnetii* microbial load. It was found that there is a significant relationship between the age of the cow and the excretion of *C. burnetii* through the cow milk in Lorestan province ($p < 0.05$).

Conclusion: Based on the findings of this study, it can be concluded that cow's milk can be considered as one of the important sources in the transmission of *C. burnetii* bacteria to the next hosts. Therefore, because of the long shelf life of *C. burnetii* due to the presence of the pseudospore form, the risk of transmission of *C. burnetii* through raw milk and unpasteurized dairy products cannot be ignored. Therefore, cow's milk should be considered as an important factor in the epidemiology of Q fever and public health in the central region of Lorestan province.

Keywords: Milk, Transposon gene, Nested-PCR, *Coxiella burnetii*.

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