

Detection of *Bordetella parapertussis* in Clinical Samples Based on Real-Time PCR and Culture

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Background & Objectives: Parapertussis is a bacterial illness that is similar to pertussis (whooping cough) but is typically milder than pertussis. Parapertussis is caused by the bacterium *Bordetella parapertussis*. Compared to pertussis, the occurrence of parapertussis is infrequent. However, because of lack of data about this illness, the aim of this research was phenotypic and molecular detection of *B. parapertussis* strains in clinical samples isolated from patients in Iran.

Methods: Totally 1269 respiratory tract swabs were used for both culture and real-time PCR assay based on IS1001 target to rapid detection of *B. parapertussis* in the samples.

Results: Among all specimens collected, 1 specimen was culture positive and 8 specimens were diagnosed as infected by *B. parapertussis* using IS1001 primers. One isolate that was positive with both culture and real-time PCR, was from a 6 years old patient who didn't use any antibiotic before sampling. All PCR positive specimens were isolated from children 7 years of age or younger. Our data showed that 4 PCR positive specimens including culture positive one were from vaccinated children.

Conclusion: Although *B. parapertussis* causes less severe disease compared to pertussis, this illness would be more severe among infants less than six months of age than older persons. However, as it's expected, the rate of infected persons by this organism was very low in this research. As whooping cough vaccines composed only of *B. pertussis* antigens, it provides little if any protection against *B. parapertussis*. Four infected patients were vaccinated in this study.

Keywords: *B. parapertussis*; Real-Time PCR