Diagnosis of Human Brucellosis By Blood Culture (BACTEC) And PCR Methods Via Whole Blood And Serum

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Background & Objectives: Brucellosis is most common global zoonosis and an important public health problem in many parts of the world including Iran. Diagnosis of brucellosis is frequently difficult to establish and conventional Methods are not always successful in identifying the organisms. Rapid detection of Brucella species by an automated blood culture system and polymerase chain reaction (PCR) may lead to an earlier diagnosis and may improve patient management. The aim of this study was to evaluate PCR technique as a diagnostic tool for brucellosis in comparison to conventional bacteriological techniques.

Methods: A total of 50 patients suspected to have brucellosis were included in this study. All patients presented with clinical signs compatible with brucellosis. Diagnosis was established by detecting a titer equal to or greater than 1:160 by the standard tube agglutination (STA) Methods. Blood samples and sera from those patients were tested by culture using BACTEC 9050 system and PCR using primer set to amplify a 223 bp region within the gene coding for a 31 KD Brucella antigen.

Results: Eleven whole blood samples and 17 serum samples out of 50 had positive PCR and 7 patients out of 50 had Brucella species grown in their cultures.

Conclusion: These results suggest that the serum- PCR assay is rapid and easy to perform and highly sensitive and specific, and it may therefore be considered a useful tool for diagnosis of human brucellosis.

Keywords: Brucellosis; PCR; BACTEC; Blood Culture