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# Molecular Diagnostic Methods of Brucellosis: a Note on Pitfalls

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Clinical manifestations of the brucellosis may show extensive appearance because of its wide signs and symptoms. Patients with brucellosis are usually symptomatically treated by using different antibiotics at private clinics due to misdiagnosis of clinical laboratory findings specially those chronic forms. These subjects will have been hospitalized with a complicated form of signs after changing a few therapies (1).

At this time, classical methods such as culture based and serological procedures could not alone meet of clinicians' demands. Many researchers have been being tried to introduce an alternative method better in accuracy, reliability and efficiency aspects. However, most reported comparison studies were not able to present desired results.There are not any significant points in existence of various and even contradictory results in laboratory interpretation reports. Those patients with recent brucellosis involvement or acute disease are better diagnosed than those hospitalized or chronic cases. Obviously, in-patients have more problematical conditions than out-patients, this concern has not been noticed in the majority of molecular epidemiology studies. Analyzed results of various tests are not fully in agreement with each other in these reports, confirming each test is suited for some specific clinical conditions (2).

Another important problem is applying home brew protocols in all comparative studies. This type of non-commercial diagnostic protocols are being surprisingly applied in most small Iranian clinical laboratories. These assays have been being followed from some reported papers without any proper optimization experiments or exact clinical trial for Iranian populations, particularly when several of the effective parameters in the optimization may not be well reflected in these released reports. Some of them for proper optimization and standardization are mentioned in other studies (3).

proper sampling selection is additional problems. Serum specimens would not be preferred samples since Brucella spp. are intracellular which is integrated in PMN cells. Serum specimens may give positive results, but in those specimens having high antibody titer or acute cases. The chance of the recovery Brucella spp. DNA is obviously reduced in those chronic and complicated patients` infections. In addition, sampling from patients undergoing treatment may have low positive predictive value results (4-6). Those commercially approved extraction kits containing internal control, are able to check any possible PCR inhibitions. It would seem those should be used in Molecular diagnostic settings (4,7).

Finally, various pathogenic type of Brucella species involve in many countries. At present, we have no significant documentary reports for the frequency rate of Brucella spp. in our community. Some reports

represent considerable rate for B. abortus while some not. Therefore, applied protocol must be enough sensitive to detect and even differentiate at least *B. abortus* from *B. melitensis*, although some reports have indicated the presence of *B. canis* as well as in Iran (8).

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