



## Relapse: Still a Challenge in Brucellosis Therapy

Sajad Borzoueisileh<sup>1</sup>, Soheil Ebrahimpour<sup>2\*</sup>

### Dear Editor,

Brucellosis is an animal disease which can be transmitted to human or it is better to say brucellosis is a zoonotic disease. Brucella is a gram negative and intracellular pathogenic bacteria in mammals. Bacteria typology consisted of *B. melitensis*, *B. canis*, *B. abortus*, *B. suis*, *B. ovis*, *B. neotomae*, *B. microti*, *B. ceti*, *B. inopinata*, *B. pinnipedialis* but among them *B. melitensis* is the most significant type that causes infection in human. However the first 4 of species mentioned are pathogenic in human. Human is considered as an accidental host for this disease. Utilization of unpasteurized dairies like raw milk, cheese, cream is one of the most main transmitter ways of the infection to human. Transmission of this bacterium is reported in laboratories' staff especially via contaminated dust. Moreover, this microorganism can infect host body via skin wounds. Brucellosis has high universal incidence, whereas some countries in Middle East area, Indian subcontinental and south and west of America had the most reports of existence of this disease (1). Incubation times of this infection are various, actually times, such as 2 weeks or more are mentioned in medical sources for this infection symptoms representing. Few cases of diseases ending is death. Most popular reasons of death, which related to this infection are endocarditis and nervous system involvement (2). Disease range in human is variable from diagnostic routine and serological tests like sub clinical to clinical symptoms cases return or relapse. This disease has inclusive involvement such as fever, anorexia, night sweat, weight lost and asthenia (3). Osteoarticular propounded as the most famous focal. It should be mentioned that different organs of body will be endorsed in infection, which among them can point to liver that transaminase enzyme increase sometimes. More infected patients after appropriate treatment cured of course after months. The main important purpose of brucellosis cure is decline of involvement and increase in signs of improvement. Regardless of the adequate treatment some patients suffer from relapse of diseases symptoms, somehow microorganisms detected of blood serum, in the other word, these persons involve relapse into infection. Relapse usually happen after 6 months of treatment but almost lower than first affection

and happen in about 5%-40% of patients (4). Relapse happens with some factors such as body immune response especially cell-mediated immunity (CMI), localized infection, brucellosis bacteria type and kind of treatment. The reports in recent cases showed that single chemotherapy had high relapse rate and also this treatment knew unacceptable and inappropriate one.

Some experts like Solera et al said that positive blood culture and body temperature  $>38^{\circ}\text{C}$  along with relapse (5). As we know the first immunoglobulin that appears in acute form is IgM, but this antibody in patient who does not receive treatment, changes to IgG. In somehow during relapse time the rate of IgA and IgG extensively increase. It is necessary to mention that among serological tests, serum agglutination test (SAT) as a valuable and choice test use for diagnosis of acute form of disease, of course some of experts for diagnosis of relapse recommend enzyme-linked immunosorbent assay (ELISA) test, because the rate of IgM, IgA, IgG titers showed separately. Some study proposed polymerase chain reaction (PCR) test for early diagnosis of relapse. Herein can imply that brucella bacterium is intracellular so can be saved from immune system and can be hidden. For these reasons diagnosis of relapse seems to be hard with costume serological methods as mentioned in this part. Regardless of the lost of survey, risk factors of relapse are still partly unknown. In addition, appropriate treatment regimen for this infection need abroad research.

### Ethical issues

Ethical of this research work was approved by Babol University of Medical Sciences, Iran.

### Conflict of Interests

The authors declare that they have no conflict of interest in this work.

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<sup>1</sup>Cellular and Molecular Biology Research Center, Babol University of Medical Sciences, Babol, Iran. <sup>2</sup>Infectious Diseases and Tropical Medicine Research center, Babol university of Medical sciences, Babol Iran.

\*Corresponding author: Soheil Ebrahimpour, Infectious Diseases and Tropical Medicine Research Center, Babol University of Medical Sciences, Babol, Iran. Tel: +989111149309, Email: drsoheil1503@yahoo.com

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