

The Lebanese LSIDCM

The importance of blood culture and serology for Brucellosis diagnosis and treatment

Lama Faddoul², Rania Azar¹, Antoine Haddad¹, Pierre Abi Hanna¹

¹ Lebanese University, Beirut, Lebanon

² Lebanese International University, Beirut, Lebanon

Abstract

Introduction: Brucellosis is a zoonotic endemic disease in Lebanon. It is caused by direct transmission of *Brucella* from contaminated animal products to humans. If left untreated brucellosis might lead to several complications and a chronic disease state. The prompt diagnosis of brucellosis has the ability to limit the progression of the disease, especially if the correct treatment is administered for the adequate amount of time. The aim of this study is to determine the optimal diagnostic tool and to assess *Brucella* burden in Lebanon.

Methodology: This retrospective study was performed by reviewing the medical charts of 46 brucellosis patients from three Lebanese hospitals. Brucellosis diagnostic tests were compared and sensitivity of each test was calculated, as well as, the level of agreement with other standard diagnostic tools. Data retrieved were analyzed for relevance and statistical significance using the statistical package for social sciences version 23.

Results: Sensitivity results of the diagnostic tests were: Rose Bengal test (RBT) 94.7%, blood culture 65.6%, standard agglutination test (SAT) *melitensis* 95.1% and SAT *abortus* 97.6%. The level of agreement between RBT and SAT *melitensis* as well as *abortus* is 98% and 90.18%, respectively. While the level of agreement between Blood culture and SAT *melitensis* as well as *abortus* is 66.88% and 64.5%, respectively.

Discussion: Culture techniques require further optimization in order to find the best diagnostic tool for brucellosis. Meanwhile, Blood Rose Bengal test held a significant potential for identifying *Brucella* infection in a highly sensitive, cost effective and time saving manner.

Key words: Brucellosis; Rose Bengal; serum agglutination test; blood culture.

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Corresponding author

Abi Hanna, Pierre, MD, PhD

School of medicine and pharmacy, Lebanese university

Hadath 2, 961, Beirut, Lebanon.

Phone: 9613611221

Email: boutrosh@hotmail.com

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