CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.887632

Available online at: http://www.iajps.com *Review Article*

TB DIAGNOSTIC METHODS AND INVOLVED RESPONSES -A REVIEW ARTICLE

Fateme parooei [1], Morteza Salarzaei [1], Mahmood Anbari *[2], Alireza Abrishami [3], Ali Alidadi [4], Dadkhoda soofi [5]

[1] Medical student, Student Research Committee, Zabol University of Medical Sciences, zabol, Iran

[2]Zabol University of Medical Sciences, Zabol, Iran.

[3] Zabol University of Medical Sciences, Zabol, Iran

[3] Department of orthopedics, Faculty of Medicine, Zabol University of Medical Sciences, Zabol, Iran.

[4] Faculty of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran.

[5] Department of Internal Medicine, Amir al-Momenin Hospital, Zabol University of Medical Sciences, Zabol, Iran.

Abstract:

Introduction: *Tuberculosis is the most common cause of death from single-agent infectious diseases in the world, and it is considered to tenth cause of death all over the world; according to estimates, this disease will keep occupying the same position in regard with mortality rate and it might even rise up to the seventh place by 2020.*

Method: *In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies TB diagnostic methods and involved responses. In this review, the papers published until early January 2017 that were conducted to study the TB diagnostic methods and involved responses were selected. In searching for the articles, those English papers were selected that had iTB diagnostic methods and involved responses.*

Findings: *Most common diagnostic methods for tuberculosis include clinical suspicion, response to treatment, chest torsion, direct measles tuberculin test, mycobacterium culture, and Nucleic Acid Amplification methods. The ideal test for active pulmonary tuberculosis should be easy to apply, with highly sensitive and accurate findings; it should be cheap and have the same results under different conditions.*

Discussion and conclusion: *Thus, the presence of complex defense systems in the body is the main cause of resistance against this fatal disease. Medical knowledge can identify the immune response network to this pathogen, which, in turn, helps the development of new-generation vaccines and more effective treatment for fighting as well as possible against this deadly disease.*

Key words: *TB, diagnostic ,involved response*

Corresponding author:

Mahmood Anbari,

Zabol University of Medical Sciences, zabol, Iran

Email: mr.mortezasalar@gmail.com

Tell : +989120644917

QR code

Please cite this article in press as Mahmood Anbari et al, ***TB Diagnostic Methods and Involved Responses-A Review Article****, Indo Am. J. P. Sci, 2017; 4(09).*

INTRODUCTION:

Tuberculosis is the most common cause of death from single-agent infectious diseases in the world, and it is considered to tenth cause of death all over the world; according to estimates, this disease will keep occupying the same position in regard with mortality rate and it might even rise up to the seventh place by 2020 (1). However, given the necessity and priority of TB control programs, WHO has identified targets for TB control, the most important of which is reducing the mortality rate caused by BT down to one million deaths in the world by 2050 (2). On the one hand, more than 90% of cases of tuberculosis and tuberculosis deaths occur in developing, countries which include 75% of the most active labor age group (3). According to estimates by WHO experts, if current control measures are not strengthened, about 1,000 million people will develop a new flu infection, 150 million will die of tuberculosis, and 36 million people will be infected with this disease (4). To achieve the goals of tuberculosis control, it is necessary to include activities that increase the timely discovery and effective treatment of patients in each country within the country's tuberculosis control strategies (5). Two important factors which affect the expansion of mycobacterium tuberculosis include the population density and subjects with inherent low resistance (6). Contact with a diseased patient is a major factor in transmitting a disease so that if a patient with active tuberculosis is placed in a closed environment, within 12 hours, it can infect whomever in close touch with the patient (7). If the same patient is afflicted with a kind of tuberculosis resistant against first-line, immediate medicine, he can infect people within 4 hours. Epidemiologists believe that 1. 20% of cases of tuberculosis infection lead to cavernous pulmonary tuberculosis, and each patient with cavity produces might infect 20 other individuals (8).

METHODOLOGY:

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies TB diagnostic methods and involved responses. In this review, the papers published until early January 2017 that were conducted to study the TB diagnostic methods and involved responses were selected. In searching for the articles, those English papers were selected that had iTB diagnostic methods and involved responses.

FINDINGS:

Most common diagnostic methods for tuberculosis include clinical suspicion, response to treatment, chest torsion, direct measles tuberculin test, mycobacterium culture, and Nucleic Acid Amplification methods (9). The ideal test for active pulmonary tuberculosis should be easy to apply, with highly sensitive and accurate findings; it should be cheap and have the same results under different conditions (10). It can be done automatically or can be easily applied to the sample and allows for the sensitivity of the drug. It is also possible to detect mycobacterium tuberculosis from other Mycobacterium is a direct method of diagnosis of active tuberculosis (11). Although it provides high specificity and precision, it requires a lot of time and laboratory equipment. This test will not only allow for the examination of other mycobacteria, but also the ability to check the sensitivity of the drug, as well as providing a way to evaluate the genotype for epidemiological studies as needed (12). NAA methods can be done in one day, but, unfortunately, they are not completely standardized and their diagnostic accuracy varies considerably, and they need expensive equipment and personnel (13). Extensive research has shown that in 90-95% of healthy people, basil tuberculosis, is blocked through the acquired immune system after entering the body; however, the role of humoral innate immune system in the control of tuberculosis is being extensively investigated (14).

DISCUSSION AND CONCLUSION:

Despite extensive efforts, tuberculosis remains a major problem worldwide. The development and spread of drug-resistant strains and simultaneous infections of tuberculosis with HIV are also major challenges for the future of human health (15). Though tuberculosis is a considerably fatal disease, some humans are resistant to it; bacillus solidifies, upon entering the body of the human host, stimulates responses which generate a high degree of resistance against this disease (16). Studies have shown that in about 90 -95% of healthy people, T cells and macrophages can control and avoid the spread of their bacilli tuberculosis in the body. Following the entry of the bacterium into the body, there are intense responses that cause tuberculosis to escape and hide in infected phagosome macrophages (17). Pathological and protective responses of the host against M. tuberculosis are complex and multifaceted and involve different parts of the immune system. Each stage of the host response to M (18). Tuberculosis involves treating macrophages, epithelial cells, dendritic cells in the lung, stimulating cellular response and killing bacteria by activated macrophages, bringing granuloma under genetic control . Thus, the presence of complex defense systems in the body is the main cause of resistance against this fatal disease. Medical knowledge can identify the immune response network to this pathogen, which, in turn, helps the development of new-generation vaccines and more effective treatment for fighting as well as possible against this deadly disease.

REFERENCES:

1.Pollock JM, Welsh MD, McNair J. Immune responses in bovine tuberculosis: towards new strategies for the diagnosis and control of disease. Veterinary immunology and immunopathology. 2005 Oct 18;108(1):37-43.

2. Mazurek GH, LoBue PA, Daley CL, Bernardo J, Lardizabal AA, Bishai WR, Iademarco MF, Rothel JS. Comparison of a whole-blood interferon γ assay with tuberculin skin testing for detecting latent Mycobacterium tuberculosis infection. Jama. 2001 Oct 10;286(14):1740-7.

3.Steingart KR, Henry M, Laal S, Hopewell PC, Ramsay A, Menzies D, Cunningham J, Weldingh K, Pai M. A systematic review of commercial serological antibody detection tests for the diagnosis of extrapulmonary tuberculosis. Postgraduate medical journal. 2007 Nov 1;83(985):705-12.

4. Menzies D, Pai M, Comstock G. Meta-analysis: New Tests for the Diagnosis of Latent Tuberculosis Infection: Areas of Uncertainty and Recommendations for ResearchDiagnosis of Latent Tuberculosis Infection. Annals of internal medicine. 2007 Mar 6;146(5):340-54.

5.Pai M, Zwerling A, Menzies D. Systematic Review: T-Cell–based Assays for the Diagnosis of Latent Tuberculosis Infection: An UpdateT-Cell–based Assays for the Diagnosis of Latent Tuberculosis Infection. Annals of internal medicine. 2008 Aug 5;149(3):177-84.

6.American Thoracic Society. Diagnostic standards and classification of tuberculosis in adults and children. Am J Respir Crit Care Med. 2000;161:1376-95.

7. Elson LH, Calvopina H M, Paredes Y W, Araujo N E, Bradley JE, Guderian RH, Nutman TB. Immunity to onchocerciasis: putative immune persons produce a Thl-like response to Onchocerca volvulus. Journal of Infectious Diseases. 1995 Mar 1;171(3):652-8.

8. Bourgarit A, Carcelain G, Martinez V, Lascoux C, Delcey V, Gicquel B, Vicaut E, Lagrange PH, Sereni D, Autran B. Explosion of tuberculin-specific Th1-responses induces immune restoration syndrome in tuberculosis and HIV co-infected patients. Aids. 2006 Jan 9;20(2):F1-7.

9. Mahmoodi Z, Havasian MR, Afshari J, Salarzaei M. Comparison of the Time Interval between the Onset of Clinical Symptoms and Receiving Streptokinase in Patients with Acute Myocardial Infarction (AMI) at Amir Hospital in Zabol, Iran, 2013. Int. J. Adv. Res. Biol. Sci. 2017;4(5):95-100.

10. Mahmoodi Z, Behzadmehr M, Salarzaei M, Havasian MR. Examining High-Risk Behaviors and Behavioral Disorders in Adolescents with Addicted and Non-Addicted Fathers in Public School of Zabol in the Academic Year 2016–2017. Indian Journal of Forensic Medicine & Toxicology. 2017;11(2):251-6.

11.Salarzaei M, Saravani S, Heydari M, Aali H, Malekzadegan A, Soofi D, Movaghar ER, Mir S, Parooei F. Prevalence of Urinary Tract Infection in Children with Nephrotic Syndrome. International Journal of Pharmaceutical Sciences and Research. 2017;8(7):1346-50.

12.Poureisa M, Behzadmehr R, Daghighi MH, Akhoondzadeh L, Fouladi DF. Orientation of the facet joints in degenerative rotatory lumbar scoliosis: an MR study on 52 patients. Acta neurochirurgica. 2016 Mar 1;158(3):473-9.

13.Behzadmehr R, Seyedinejag M, Behzadmehr M. The Study of the Relationship between Depression and Emotional Intelligence among the Students of Zabol University of Medical Sciences in 2014. Asian Social Science. 2016 Jun 21;12(7):143.

14.Nemati M, Hajalioghli P, Jahed S, Behzadmehr R, Rafeey M, Fouladi DF. Normal Values of Spleen Length and Volume: An Ultrasonographic Study in Children. Ultrasound in medicine & biology. 2016 Aug 31;42(8):1771-8.

15.Kahkhaie KR, Keikhaie KR, Vahed AS, Shirazi M, Amjadi N. Randomized comparison of nylon versus absorbing polyglactin 910 for fascial closure in caesarean section. Iranian Red Crescent Medical Journal. 2014 Apr;16(4).

16.Kahkhaie KR, Keikha F, Keikhaie KR, Abdollahimohammad A, Salehin S. Perinatal Outcome After Diagnosis of Oligohydramnious at Term. Iranian Red Crescent Medical Journal. 2014 May;16(5).

17. Shahraki Z, Keikhaie KR, Amjadi N, Bonjar ZH, Jahantigh H, Doosti F, Shirazi M. Correlation of 4 Hour Urine Samples with 24-Hour Urine Samples for the Diagnosis of Preeclampsia. Journal of Obstetrics, Gynecology and Cancer Research. 2017(In Press).

18. Sharbaf, Fateme Rahimi, et al. "A Non-Invasive Method for Prediction of Fetal Lung Maturity Using Pulmonary Artery Doppler and Investigation of Fetal Outcome."