

عنوان مقاله:

Comparative Analysis of the Efficacies of the GeneXpert and Solid Culture Media Techniques in the Diagnosis of Mycobacterium Tuberculosis

محل انتشار:

مجله آرشیو رازی، دوره 77، شماره 6 (سال: 1401)

تعداد صفحات اصل مقاله: 8

نویسندگان:

Z Nadeem - Department of Microbiology, University of Central Punjab Lahore, Pakistan

J Iqbal - Department of Microbiology, University of Central Punjab Lahore, Pakistan

S Kausar - Department of Microbiology, University of Central Punjab Lahore, Pakistan

A Gasmî Benahmed - Académie Internationale de Médecine Dentaire Intégrative, Paris, France

S Noor - Institute of Molecular Biology and Biotechnology, BZ University, Multan, Pakistan

F. Khan - Department of Eastern Medicine, Government College University Faisalabad, Pakistan

I Saleem - Department of Pharmacy, University of Poonch Rawalakot, Pakistan

N Munir - Department of Biochemistry, Government College University Faisalabad, Pakistan

M Riaz - Department of Allied Health Sciences, University of Sargodha, Pakistan

M Akram - Department of Eastern Medicine, Government College University Faisalabad, Pakistan

P. Oladoye - Department of Chemistry and Biochemistry, Florida International University, ۱۱۲۰۰ SW ۸th St, Miami, FL ۳۳۱۹۹

S. Salim - Al-Mussiab Technical College, Al-Furat Al-Awsat Technical University, Iraq

A. Abed - Al-Mussiab Technical College, Al-Furat Al-Awsat Technical University, Iraq

W. Elbossaty - Biochemistry Department, Damietta University, Egypt

A Gasmî - Société Francophone de Nutrithérapie et de Nutrition Appliquée, Villeurbanne, France

خلاصه مقاله:

Tuberculosis is one of the predominant infectious diseases causing significant deaths worldwide. Detection of Mycobacterium tuberculosis bacilli (MTB) using culture media was officially recognized by World Health Organization. However, there is a significant limitation in the authenticity of evaluation for its effectiveness on clinically important attributes. GeneXpert detects the presence of Mycobacterium tuberculosis (M. tuberculosis) based on the detection of nucleic acid and is able to identify the resistance of both isoniazid (INH) and Rifampicin (RIF) drugs. In this technique, DNA amplification is done using

the GeneXpert instrument in the suspected sample with a specific reagent cartridge. Although GeneXpert is a rapid technique compared to other diagnostic tools for MTB identification due to false-negative results, the culture media technique is still considered the gold standard in detecting M. tuberculosis. The current study was designed to evaluate the comparative efficacies of GeneXpert and the solid culture media technique in identifying MTB. Sputum samples of 250 (n=250) suspected tuberculosis (TB) patients were investigated using both diagnostic techniques. The results revealed that out of the 250 suspected patients, 30 (12%) samples were positive with the culture media technique, while only 17 (6.8%) samples showed positive results with GeneXpert. Culture tests and GeneXpert are not equally efficient in detecting M. tuberculosis. The current study's findings showed that the culture-based detection method for M. tuberculosis is more efficient and reliable than GeneXpert

کلمات کلیدی:

M. tuberculosis, GeneXpert, culture media, Acid-fast Bacilli

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