

Comparative and Co-Relative Analysis of Different Tests for Rapid Diagnosis of Tuberculosis (TB) from Pleural Effusion

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SUMMARY. The present study was aimed to determine and investigate the rapid diagnosis of tuberculosis (TB) by comparing liquid culture, Xpert MTB/RIF assay and adenosine deaminase assay (ADA) methods. A total of 55 pleural effusion samples were collected from patients of 10-75 years of age of both sexes. Mycobacterium tuberculosis and rifampicin resistance Mycobacterial strain was detected by LED fluorescence microscope, Lowenstein-Jensen (L-J) culture, liquid culture, ADA and Gene Xpert MTB/RIF methods. Rapid and accurate diagnosis was estimated by comparative efficiency of Gene Xpert MTB/RIF, ADA and Liquid culture. A total of 20 (36.75%) cases were found positive in Xpert MTB/RIF assay among which 5 (50%) were rifampicin resistant. As compared with the conventional method and liquid culture method, Xpert MTB/RIF showed high sensitivity (100%) and 99% and 98% specificity, respectively. Adenosine diamine level was also counted to determine the TB positivity. Out of 55 patients, 16 (29.09%) were positive for ADA with higher sensitivity specificity. We concluded that, Xpert MTB/RIF assay was evident to be the rapid and accurate method to detect pleural TB, so that patient can get early treatment.

RESUMEN. El presente estudio tuvo como objetivo determinar e investigar el diagnóstico rápido de tuberculosis (TB) comparando los métodos de cultivo líquido, ensayo Xpert MTB/RIF y ensayo de adenosina desaminasa (ADA). Se recogieron un total de 55 muestras de derrame pleural de pacientes de 10 a 75 años de ambos sexos. La cepa micobacteriana Mycobacterium tuberculosis y resistencia a la rifampicina se detectó mediante microscopio de fluorescencia LED, cultivo de Lowenstein-Jensen (L-J), cultivo líquido, métodos ADA y Gene Xpert MTB/RIF. Se estimó un diagnóstico rápido y preciso mediante la eficiencia comparativa de Gene Xpert MTB/RIF, ADA y cultivo líquido. Un total de 20 (36,75%) casos resultaron positivos en el ensayo Xpert MTB/RIF, de los cuales 5 (50%) fueron resistentes a la rifampicina. En comparación con el método convencional y el método de cultivo líquido, Xpert MTB/RIF mostró una alta sensibilidad (100%) y una especificidad del 99% y el 98%, respectivamente. También se contó el nivel de adenosina diamina para determinar la positividad de la tuberculosis. De los 55 pacientes, 16 (29,09%) fueron positivos para ADA con mayor especificidad de sensibilidad. Llegamos a la conclusión de que el ensayo Xpert MTB/RIF resultó ser el método rápido y preciso para detectar la tuberculosis pleural, de modo que el paciente pueda recibir un tratamiento temprano.

KEY WORDS: adenosine deaminase assay, Gene Xpert MTB/RIF, Lowenstein-Jensen, pleural effusion, tuberculosis.

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