

عنوان مقاله:

Investigation of the rpoB Mutations Causing Rifampin Resistance by Rapid Screening in Mycobacterium Tuberculosis in North-East of Iran

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خلاصه مقاله:

Background and Objectives: The incidence of rifampin-resistant strains of Mycobacterium tuberculosis has attracted more attention than the tuberculosis infection due to laborious treatment and control. Recognizing the Mycobacterium tuberculosis genotypes involving in drug resistance via multiplex PCR, a simple and rapid genotyping method, is an emergency for better treatment and control of tuberculosis. This study was designed to specify the frequency of rifampin-resistant strains of Mycobacterium tuberculosis isolated from patients by multiplex allele-specific Polymerase Chain Reaction assay (MAS-PCR). **Methods:** In this study, 88 Mycobacterium tuberculosis positive samples were included from Qaem Hospital, Mashhad. MAS-PCR was used to detect the rifampin resistance associated mutations in rpoB gene. **Results:** Mutations in three codons of rpoB gene causing rifampin resistance were detected in 51 isolates (58.96%). The detected mutations in codons 531, 526, and 516 were 55.68%, 38.63%, and 13.63%, respectively. The simultaneous mutations were detected in 11 isolates (12.50%) in codons 531, 526 and 516, in 21 isolates (23.86%) in codons 531 and 526, and in one isolate (1.13%) in codons 526 and 516. **Conclusion:** According to the results of this study, the frequency of rifampin-resistant strains of Mycobacterium tuberculosis isolated from Khorasan province patients (North-East of Iran) was high. The developed MAS-PCR assay can be used for rapid detection in clinical diagnostic laboratories in areas with high prevalence of multidrug-resistant Mycobacterium tuberculosis strains. In this respect, MAS-PCR is simple, rapid, and highly sensitive method for drug susceptibility tests for detecting multidrug-resistant Mycobacterium tuberculosis.

کلمات کلیدی:

Multiplex PCR, rpoB gene, rifampin resistance, Mycobacterium tuberculosis

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