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Typing of *Mycobacterium tuberculosis* strains by DNA fingerprinting methods (RAPD, ERIC AND GTG-5 PCR)

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Background: Application of molecular methods in order to identification and isolation of *Mycobacterium tuberculosis* complex from Non tuberculosis Mycobacteria is useful for appropriate treatment of tubercular patients and interruption of transmission chain in endemic areas. This study aimed to assess the PCR-RFLP method for simultaneously identification and isolation of *Mycobacterium tuberculosis* complex of Non tuberculosis *Mycobacteria* and typing of *M. tuberculosis* strains *b*y PCR-based fingerprinting methods.

Methods: This cross - sectional, descriptive study of 120 mycobacterial strains isolated from the Lowenstein – Jenson Media, referring to patients from Fars province and neighboring provinces was conducted in 1391. After differential biochemical tests, PCR-RFLP on *hsp65* gene was performed. *Mycobacterium tuberculosis* strains then subjected to fingerprinting techniques (RAPD, ERIC, GTG5) to find heterogeneity of them.

Results: Of the 120 cases reviewed, 112 cases (93/44%) were *M. tuberculosis* from aspect of yielded pattern of generated bands on polyacrylamide gel and 8 cases (6/66%) belonged to the group of non tuberculous *mycobacteria* (3 M. *chelonae*and 5 M.*gordonae*). By usage of fingerprinting techniques, different bands and profiles polymorphism among strains were obtained. RAPD method using primer INS-2, revealed the highest degree of genetic diversity among the three fingerprinting techniques.

Conclusion: The results showed that the RFLP-PCR, is quick, easy method with high sensitivity and specificity which generate unique patterns in Mycobacterium species. Detection of species leads to proper decision for treatment .between typing methods, (RAPD) showed more diversity. Therefore utilization of this method with other molecular typing methods is recommended in order to identification and clustering of strains for epidemiological survey.

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