Abstract

Strains of Mycobacterium tuberculosis were compared using two DNA fingerprinting techniques: Restriction Fragment Length Polymorphism (RFLP) and Double-Repetitive-Element-PCR (DRE-PCR). Two of these strains: IH1 (susceptible to isoniazid) and IH2 (resistant to isoniazid) were recovered from cases of pulmonary tuberculosis which occurred in two brothers who lived together. The first one was recognized on July 1999, and the second was diagnosed one year later. IH1 and IH2 showed the same pattern of bands with both molecular tests. These results suggest that single drug chemoprophylaxis may occasionally select resistant strains for that drug, which can eventually cause disease and be recognized through these tests. Strains IH3, IH4 and IH5 were obtained from sputum samples of 3 different patients, and intra-laboratory cross-contamination was suspected when it was realized that the 3 positive materials had been consecutively processed the same day by the same worker in the same biological safety cabinet. Again, the 3 strains revealed identical band patterns with RFLP and DRE-PCR, confirming the posed suspicion. The results with DRE-PCR were obtained after only 8 hours of work, without the need for subcultures. This procedure allows quick correction of treatment conducts, avoiding unnecessary exposure of people and bacteria to antimicrobial drugs.

Keywords

Mycobacterium tuberculosis, RFLP, DRE-PCR.