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USE OF IS*6110* DNA FINGERPRINTING IN TRACING MAN-TO-MAN TRANSMISSION OF *MYCOBACTERIUM TUBERCULOSIS* IN THE CZECH REPUBLIC

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SUMMARY

The epidemiological relationship between tuberculosis cases in a prison and between cases within five families was investigated. Therefore, the isolated *Mycobacterium tuberculosis* strains were subjected to restriction fragment length polymorphism (RFLP) analysis using insertion sequence IS*6110* as a probe.

In case of 11 patients, the expected links of transmission were confirmed by RFLP typing. In contrast, in case of 4 patients the conclusion of classical contact tracing were not in agreement with the DNA fingerprinting results. These findings reinforce the usefulness of this recently developed technique as an additional tool in contact tracing.

The IS*6110* DNA fingerprints of all strains investigated consisted of 7 to 13 bands and showed a high degree of polymorphism. Comparison of these fingerprints with those recorded in the Czech Republic previously, revealed the presence of a predominant DNA fingerprint type, without a known connection between the cases. Futhermore, other patterns found in the present study showed a high degree of similarity with the previously obtained fingerprints.

Part of the patients were sampled twice. All of these double isolates showed identical fingerprints, confirming the previously described stability of IS*6110* DNA fingerprints. In contrast, from one couple of strains, isolated from husband and wife both suffering from tuberculosis, a slight change in one of the two patterns was observed. The patterns shared 10 band positions, confirming the expected relationship between these cases, but one of the patterns contained one additional band.

Key words: Mycobacterium tuberculosis, IS*6110* restriction fragment length polymorphism, epidemiology

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