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Molecular diversity of *Mycobacterium tuberculosis* complex isolated from pulmonary tuberculosis cases in Malaysia

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Tuberculosis (TB) still constitutes a major public health problem in Malaysia. The identification and genotyping based characterization of *Mycobacterium tuberculosis* complex (MTBC) isolates causing the disease is important to determine the effectiveness of the control and surveillance programs. This study intended a first assessment of spoligotyping-based MTBC genotypic diversity in Malaysia followed by a comparison of strains with those prevailing in neighboring countries by comparison with an international MTBC genotyping database. Spoligotyping was performed on a total of 220 *M. tuberculosis* clinical isolates collected in Kelantan and Kuala Lumpur. The results were compared with the SITVIT2 international database

Results: Spoligotyping revealed 77 different patterns: 22 corresponded to orphan patterns while 55 patterns containing 198 isolates were assigned a Spoligo International Type (SIT) designation in the database (the latter included 6 newly created SITs). The eight most common SITs grouped 141 isolates (5 to 56 strains per cluster) as follows: SIT1/Beijing, n=56, 25.5%; SIT745/EAI1-SOM, n=33, 15.0%; SIT591/EAI6-BGD1, n=13, 5.9%; SIT256/EAI5, n=12, 5.5%; SIT236/EAI5, n=10, 4.6%; SIT19/EAI2-Manila, n=9, 4.1%; SIT89/EAI2-Nonthaburi, n=5, 2.3%; and SIT50/H3, n=3, 1.4%. The association between city of isolation and lineages was statistically significant; Haarlem and T lineages being higher in Kuala Lumpur ($p<0.01$). However, no statistically significant differences were noted when comparing drug resistance vs. major lineages, nor between gender and clades.

We conclude that, the ancestral East-African-Indian (EAI) lineage was most predominant followed by the Beijing lineage. A comparison of strains with those prevailing in neighboring countries in South Asia, East Asia and South East Asia underlined the phylogeographical specificity of SIT745 for Malaysia, and its probable ongoing evolution.

Biography

Siti Suraiya has obtained her MD way back in 1995, later obtained her Master Pathology in 2003 and finally acquired her PhD in 2014 from Universiti Sains Malaysia, USM. She is currently a senior lecturer at Medical School, Universiti Sains Malaysia (USM), and at the same time head of Unit, Infection Control Unit, Hospital Universiti Sains Malaysia (HUSM). She has published more than 25 papers in reputed journals and has been serving as an editorial board member for several journals.

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