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Prevalence of *Mycobacterium tuberculosis* among a selected group of Sri Lankan patients: A meta data analysis

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Mycobacterium tuberculosis (MTB) is the bacterium responsible for tuberculosis (TB), a chronic airborne disease in humans. In Sri Lanka, TB incidence has remained static, emphasizing its ongoing public health concern. Rapid diagnosis and treatment, using conventional and molecular techniques, are vital in preventing TB transmission. This study aims to investigate the prevalence of MTB among a selected group of Sri Lankan patients by applying data mining techniques to a dataset comprising 160 TB samples from three research articles published between 2020 and 2023. A systematic data mining approach was employed to identify relevant research articles reporting the prevalence of MTB in Sri Lankan patients, employing both molecular and conventional methods. After carefully screening the articles (from Google scholar) based on predefined criteria, three studies were selected for inclusion. These studies provided data on a total of 160 TB samples, which were subsequently analyzed to determine the prevalence of MTB. Among the 160 TB samples analyzed, 48 (30%) were found positive for MTB. The individual studies reported prevalence rates ranging from 25% to 35%. An analysis of the positive cases revealed diverse age distributions, with the highest prevalence observed among individuals aged between 25-44 years. Gender-wise, there was a relatively balanced distribution, with 52% of positive cases being male and 48% female. The prevalence of MTB infection among the selected group of Sri Lankan patients was found to be 30% based on the analysis of 160 TB samples. These findings emphasize the ongoing burden of TB in Sri Lanka and underscore the importance of early detection and intervention strategies.

Keywords: Molecular based detection, *Mycobacterium tuberculosis*, Prevalence, Sri Lanka

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