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Implication of Age-Demography of *Mycobacterium tuberculosis* Infection Among HIV-Seropositive and HIV-Seronegative Individuals

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Biotechnological Approaches to Sustainable Development Goals

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Abstract

Continuous community spread of *Mycobacterium tuberculosis* (Mtb) infection among age-diverse (human immunodeficiency virus) HIV-seropositive and HIV-seronegative individuals remains a challenge to public health infection control causing persistent pulmonary morbidity. The present study evaluates the implication of age demography as risk for continuous Mtb infection spread in Southwest Nigeria. Sputum from 75 suspected Mtb infected subjects was analyzed for Mtb and rifampicin (RIF) drug resistance using Nucleic Acid Amplification Test (GeneXpert/RIF) and HIV status. Receiver operation characteristics (ROC) for age differences not diversity were analyzed for evaluation as risk factors. Significant rates of Mtb+/HIV+ (5.7%) and Mtb+/HIV- (8.2%) were observed with significant Mtb/rifampicin resistance (Mtb/RIF^R) (5.3%) detection among the subjects ($p = 0.001$). More than 5% significant occurrence rates of Mtb+/HIV+ and Mtb+/HIV- among age group 24–55 years (odds ratio (OR) [CI] = 1.21[0.091–7.827]; $p = 0.001$) and male category (OR[CI] = 0.54[0.782–11.712]; $p = 0.026$) were recorded. Age demography of active working individuals (ages 24–55) is predictive for the group with high Mtb infection. Concerted preventive measures must be focused on rural communities and working group ages.

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