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Singapore identifies role of 'harmless' bacteria in worsening lung diseases

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Prior to this discovery, Neisseria was not considered to be a cause of lung infection or severe disease in bronchiectasis patients



A team of international scientists led by the Nanyang Technological University, Singapore (NTU Singapore) has discovered that *Neisseria* - a genus of bacteria that lives in the human body – is not as harmless as previously thought, and can cause infections in patients with bronchiectasis, asthma, and chronic obstructive pulmonary disease (COPD).

In a landmark study, published in *Cell Host & Microbe,* the team showed conclusive evidence that *Neisseria* species can cause disease in the lung and are linked to worsening bronchiectasis (a type of lung disease) in patients.

While Neisseria species are well known to cause meningitis and gonorrhoea, they are not known to infect lungs. Through detailed identification and meticulous characterisation, the research team found that Neisseria dominated the microbiome of Asian patients with worsening bronchiectasis.

Aside from linking Neisseria and severe bronchiectasis, the NTU-led research team also detected the presence of the same bacteria in other more common chronic respiratory conditions such as severe asthma and Chronic Obstructive Pulmonary 3 Disease (COPD) – a condition that causes airflow blockage and breathing-related problems.

Using next-generation sequencing technologies, the researchers found the presence of the bacteria in the home environment, suggesting that the indoor living space and potentially the tropical climate may favour the presence of this bacteria in the Asian setting.

The researchers are now looking to conduct further studies and clinical trials of Neisseria eradication from the microbiome through the newly launched LKCMedicine Centre for Microbiome Medicine.