

Prevalence of Trichomonas Tenax in Patients with Pulmonary Disease and Watersheds and Its Potential Implications for Pulmonary Virus Infection

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Abstract : Trichomonas tenax is a microaerophilic oral protozoan found in patients with poor oral hygiene. It participates in the inflammatory process of periodontal disease and can potentially be aspirated into the lungs, giving rise to pulmonary trichomoniasis. However, the precise roles of T. tenax in the pulmonary system remain largely unexplored and warrant comprehensive epidemiological investigation. To assess the prevalence of T. tenax infection, we collected bronchoalveolar lavage fluid (BALF) samples from hospitalized patients with lung diseases. A specific nested PCR approach was employed to determine prevalence rates, yielding 21 positive cases out of 61 samples from Ditmanson Medical Foundation Chia-Yi Christian Hospital, and 11 positive cases out of 55 samples from National Cheng Kung University Hospital. Furthermore, there is a critical need for comprehensive data regarding the presence of T. tenax in environmental surface watersheds. In this context, we present findings from investigations in the Yanshuei and Donggang river basins in southern Taiwan, which are crucial sources for public drinking water in the region. In order to elucidate potential implications on pulmonary virus infections, we conducted an analysis of gene expression level changes in H292 cell line after exposure to T. tenax. Our findings revealed significant regulation of multiple virus-related genes, including IFI44L and IFITM3. Ongoing research endeavors are focused on identifying the key components within T. tenax responsible for these observed effects. Crucially, this study lays the groundwork for a preliminary understanding of T. tenax prevalence in patients with pulmonary diseases. It also seeks to establish a meaningful correlation between lung infections and oral hygiene practices, with the ultimate aim of informing distinct treatment and prevention strategies.

Keywords : parasitology, genes, virus, human health, infection, lung

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