

Editorial Highlights on Medical Microbiology

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Editorial Note

Journal of Medical Microbiology and Diagnosis commemorates its decade long service to the scientific community by consistently publishing peer-reviewed articles and tracking the progress and significant advancements in the field of Microbiology. Ever since its inception in the year 2012, in addition to regular issue releases on a quarterly basis, this transdisciplinary journal is also releasing special issues and conference proceedings from time to time, thus comprehensively covering a wide range of topics and emerging challenges in Bacteriology, Clinical and Medical Diagnostics, Parasitology, Bacterial Infections. The journal focuses on application oriented research on Bacteriology, Clinical and Medical Diagnostics, Parasitology, Bacterial Infections. In this issue some of the recent and impactful research articles that were published by the journal will be discussed.

Tuberculosis is an infectious bacterial disease caused by *Mycobacterium tuberculosis* which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with active pulmonary disease [1]. TB is a serious global public health threat. TB is the ninth leading cause of death worldwide and the leading cause from a single infectious agent, ranking above HIV/AIDS. In 2016, there were an estimated 1.3 million TB deaths among HIV negative and an additional 374 000 deaths among HIVpositive people. Globally in 2016, an estimated 4.1% of new cases and 19% of previously treated cases had Multidrug resistant TB. Rapid identification is important for effective treatment and control of MDR-TB. Conventional methods of drug susceptibility testing (DST) include solid media-based methods such as the proportion, absolute concentration, and resistance ratio methods. These can take up to 12 weeks to produce definitive results, leading to prolonged infectiousness. Liquid media-based tests are more rapid, but also costlier and require sophisticated laboratories and trained personnel. Molecular LPA permit rapid diagnosis of TB, isoniazid and rifampin resistance, and clinically relevant non-*M. tuberculosis* mycobacteria. In LPA assays, DNA or RNA is isolated from culture or direct (i.e., sputum) respiratory samples and then amplified and reverse hybridized onto a nitrocellulose strip with immobilized probes for different mycobacteria or for mutations that confer resistance. These strips can be quickly interpreted using a template, with the

entire testing process taking a day or even less. The GenoType MTBDRplus (Hain Lifesciences, Nehren, Germany) identifies rifampin and isoniazid resistance by detecting the most common mutations of the *rpoB* gene and the *katG* and *inhA* genes, respectively.

Respiratory and systemic mycoses are globally emerging as problems of increasing importance in infectious diseases. Fungal spores are representing more than 50,000 spores per cubic meter of air during the fungal season [2]. Various mycoses form the bulk of opportunistic infections in AIDS patients and are increasing in the form of an epidemic parallel to the AIDS epidemic. Among the various opportunistic infections, respiratory infections account for up to 70% of AIDS defining illnesses. Besides the most prevalent and well-known fungal pathogens such as *Candida albicans* and *Aspergillus fumigatus*, a large number of new emerging pathogens have been described. Few studies have compared the characteristics between different species in immunocompetent patients. The data on the etiology and spectrum of fungal infections is scarce, particularly in North India. The need of the hour is to undertake more studies on fungal etiological agents especially in a country with a rising population like ours where both the rural and urban masses are potentially at risk. Keeping the above important issues, we undertook this study to find the association of different *Candida* species in various respiratory tract diseases.

These research articles published by the journal have immense relevance and significance in development and optimization of cost-effective and affordable thermal heater-cooler blocks; characterization of heterocyclic nitrate systems and accurate determination of salbutamol in pharmaceutical formulations and biological samples.

References

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