

Invasive Opportunistic Fungal Infections and Dermatophytes: Research and Reviews in Clinical Microbiology-A Book Review

Venkataramana Kandi*

Member Asian Council for Science Editors (ACSE), Department of Microbiology,
Prathima Institute of Medical Sciences, Karimnagar, Telangana, India

*Corresponding author: ramana20021@gmail.com, ramana_20021@rediffmail.com

Received January 11, 2021; Revised February 12, 2021; Accepted February 26, 2021

Abstract Clinical microbiology deals with microorganisms and their interactions with humans. Among the various microbial species present in the environment, fungi are considered as versatile. Numerous fungal species live freely in the air, water, and soil, some cause infections in plants and a few are responsible for opportunistic and invasive infections in humans and animals. This book consists of five chapters that emphasize the role of fungi in human infections, their diagnosis, and prevention.

Keywords: clinical microbiology, microorganisms, fungi, environment, opportunistic, invasive, infections

Cite This Article: Venkataramana Kandi, "Invasive Opportunistic Fungal Infections and Dermatophytes: Research and Reviews in Clinical Microbiology-A Book Review." *American Journal of Infectious Diseases and Microbiology*, vol. 9, no. 1 (2021): 18-19. doi: 10.12691/ajidm-9-1-4.

1. Book Review

The book has five chapters, and each chapter deals with the morphological, biochemical, cultural, and other characteristic features of the fungi, especially in the human infection perspective [1]. Chapter one presents the abilities of fungal species to cause invasive infections. Although we know that the fungi are mostly saprophytes, they have the ability to adapt to humans and animals and cause infections. Most fungi accidentally gain access into humans and only occasionally lead to infections. Human infections with fungi are generally associated with certain predisposing factors like the compromised immune system, organ transplantations, and others. The chapter uses pictorial representations and tables to depict the potential of fungi to cause invasive infections.

Chapter two elaborates on the role of *Histoplasma capsulatum*, a dimorphic fungus in human infection (histoplasmosis). *H. capsulatum* is a saprophytic fungus that can survive in the environment, but when it enters humans through the respiratory tract may cause pulmonary infections. Most cases of histoplasmosis are self-limited, and rarely require antifungal therapy. But people with weakened immune systems are predisposed to severe pulmonary infections and disseminated histoplasmosis. The chapter uses a potential case of chronic pulmonary histoplasmosis, pictorial representation of the microscopic morphology, and cultural characteristic features as evidenced by the type of growth on

Sabouraud's dextrose agar (SDA) to elaborate on its significance to humans.

Cryptococcus species are a group of fungi that show yeast-like morphology, similar to *Candida* species, the common yeast. The major morphological difference is the presence of spherical and large yeast cells in contrast to the smaller, oval cells with pseudohyphae in the case of *Candida*. The most common species, *Cryptococcus neoformans* is present in the gut of birds like pigeons and parrots. Therefore, cryptococci are present in the bird droppings and can contaminate the soils and dust generated from the old buildings. The chapter uses a human case of type I respiratory failure secondary to bronchial asthma to elaborate on the potential virulence factors of *Cryptococcus* species. The pictorial representations of the microscopic and clinical characteristic features can benefit the readers.

Chapter four elaborates on two types of skin conditions, Tinea faciei, and Pityriasis folliculorum. The former is caused by the fungal species, and the latter is caused by the infestation of *Demodex* mite species. Tinea faciei generally involves skin without hair follicles and is caused by dermatophytes like *Trichophyton mentagrophytes*, whereas the mite usually moves within, and through the hair follicles. The combination of these two conditions in a patient is presented in this chapter. The pictorial representations of the appearance of the skin, the microscopic appearance of the fungi, and the *Demodex* mite, and the cultural characteristics, will certainly benefit emerging dermatologists and clinical, and medical microbiologists.

The ability to produce the coagulase enzyme is one of the several virulence factors demonstrated by microorganisms. Chapter five discusses the ability of *Candida* species to produce the coagulase enzyme and coagulate human, rabbit, and sheep plasma. Also, this chapter emphasizes the virulence factors possessed by the *Candida* species isolated from Human immunodeficiency virus (HIV) infected persons.

This book will contribute to the reader's understanding of common fungal infections and identify the predisposing factors for fungal infections. Also, the readers will be able

to elucidate the virulence factors, cultural, biochemical, and microscopic features of medically important fungi.

References

- [1] Venkataramana Kandi. Invasive Opportunistic Fungal Infections and Dermatophytes: Research and Reviews in Clinical Microbiology, 2018, ISBN: 978-613-9-95277-9; Publisher: LAP LAMBERT Academic Publishing. Available online at www.morebooks.de; Amazon.



© The Author(s) 2021. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).