Book Review

The Ecology of Mycobacteria: Impact on Animal's and Human's Health

J. Kazda, I. Pavlik, J.O. Falkinham III, K. Hruska

Springer, 1st ed., 2009, Approx. 260 pages, Hardcover, ISBN 978-1-4020-9412-5, approx. 119.95 €
http://www.springer.com/life+sci/ecology/book/978-1-4020-9412-5

The Ecology of Mycobacteria principally emphasizes the ecological characteristics of the environmental mycobacteria. It is now well understood that the incidence and prevalence of potentially pathogenic mycobacteria is increasing in humans and animals. Further, proof that mycobacteria are normal inhabitants of drinking water distribution systems and household water systems, indicates that humans and animals are surrounded by mycobacteria and thus at risk. It is anticipated that the emphasis on ecology and routes of infection will result in a text of widespread use for clinicians and for research scientists in medicine, academia, and industry. In addition to identifying habitats and thereby sources of mycobacteria infecting humans and animals, the text identifies those mycobacterial characteristics that determine its range of habitats. Additionally, the text comments critically on the available methods to identify those protocols with values in mycobacterial research. In that manner, although there are no chapters specifically devoted to methods, superior methods for mycobacteria will be identified.

A new text is needed for the mycobacteria because the prevalence of disease caused by the environmental potentially pathogenic mycobacteria is increasing. This increase is due to a number of factors. Host factors contribute to an increasing population of individuals more susceptible to mycobacterial infection. For example, the aging of the human population and the increasing frequency of immunosuppressed individuals as a result of infection (e.g. HIV), chemotherapy, and transplant-associated immunosuppression are all factors leading to increased susceptibility of infection with environment derived mycobacteria. Moreover, the role of mycobacteria as triggers in different autoimmune diseases is more and more evident. It is highly probable that peptidoglycans, lipoglycans, lipoproteins, heat shock proteins and some other structures from the mycobacterial cell wall, participate in different pathways of non-specific inflammatory reactions in humans, namely those with a specific genetic disposition. In such events mycobacteria in drinking water and food, even devitalized, have to be considered as a public health risk.

Second, human-engineered systems such as drinking water distribution systems are creating a habitat for the selection and proliferation of the potentially pathogenic mycobacteria. In as much as drinking water brings together overlapping habitats of both mycobacteria and humans and animals, a review of mycobacterial ecology is timely. The ecology of mycobacteria helps to understand the circulation of mycobacteria into the respective disciplines such as epidemiology, epizootology, immunology, environmental ecology, animal husbandry and environment conservation.

Written for:
Clinicians, nurses, fellows and interns with specialities in respiratory infection and diseases, *HIV* infection, geriatric medicine, cystic fibrosis, pulmonary alveolar porteinosis, alpha-1 antitrypsin deficiency, immunologists, research scientists, farmers, breeders of livestock, agronomists, field veterinarians, consultants, public health personnel.

Keywords:
Environmental mycobacteria; Epidemiology; Epizootology; Mycobacterial ecology; Potentially pathogenic mycobacteria

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