
TUBERCULOSIS AND NONTUBERCULOUS MYCOBACTERIAL INFECTIONS

SEVENTH EDITION

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TUBERCULOSIS AND NONTUBERCULOUS MYCOBACTERIAL INFECTIONS

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Dedication

This volume is dedicated to Dr. Menachem M. Meller, with respect, admiration, and affection.

“A faithful friend is the medicine of life.”

—Ben Sira, 6:16

“The Captain of all these men of death that came against him to take him away, was the consumption; for it was that that brought him down to the grave.”

John Bunyan
The Life and Death of Mr. Badman

The weariness, the fever, and the fret
Here, where men sit and hear each other groan;
Where palsy shakes a few, sad, last gray hairs,
Where youth grows pale, and spectre-thin, and dies;
Where but to think is to be full of sorrow
And leaden-eyed despairs,
Where beauty cannot keep her lustrous eyes,
Or new love pine at them beyond tomorrow.

John Keats
Ode to a Nightingale

There is a dread disease which so prepares its victim, as it were, for death...a dread disease, in which the struggle between soul and body is so gradual, quiet, and solemn, and the results so sure, that day by day, and grain by grain, the mortal part wastes and withers away, so that the spirit grows light...a disease in which death and life are so strangely blended that death takes the glow and hue of life, and life the gaunt and grisly form of death—a disease which medicine never cured, wealth warded off, or poverty could boast exemption from—which sometimes moves in giant strides, or sometimes at a tardy sluggish pace, but, slow or quick, is ever sure and certain.

Charles Dickens
Nicholas Nickleby

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Preface

We are pleased to present the Seventh Edition of *Tuberculosis and Nontuberculous Mycobacterial Infections*.

Tuberculosis remains epidemic in much of the world, causing several million deaths each year. Although most of these deaths occur in developing nations, the developed world continues to struggle with tuberculosis, with evolving challenges from drug resistance, immigration, immunosuppression, and the expanding awareness of nontuberculous mycobacterial infection.

The previous structure of this book has been maintained. Section I presents basic concepts of epidemiology, pathophysiology, diagnosis, medical and surgical therapy, resistant tuberculosis, vaccines, tuberculosis in enclosed populations, and the role of the health department. Section II describes both classic and more recently described clinical manifestations of tuberculous infection. Virtually every organ system is included, as are the endocrinologic and hematologic complications of tuberculosis. Separate chapters address issues unique to pregnancy, infants and children, HIV infection, and the immune reconstitution syndrome. Section III comprises nontuberculous mycobacterial infection, with an overview of clinical syndromes produced by these organisms as well as individual chapters on *Mycobacterium avium-intracellulare*, *M. fortuitum* and other rapidly growing mycobacteria, *M. kansasii*, *M. marinum*, and additional less common pathogenic mycobacteria.

Four new chapters have been added. “The Role of Therapeutic Drug Monitoring in Mycobacterial Infections” explores the vital importance of monitoring serum levels of the antituberculosis drugs; “Crisis-Affected Populations and Tuberculosis” describes the interrelationship of groups affected by social upheaval; in “Diabetes and Tuberculosis” we see the growing influence of each of these afflictions on the other; and “Biologic Agents and Tuberculosis” details the effect of these increasingly used agents on the incidence of tuberculosis. In

addition to the new chapters, every chapter has been thoroughly updated. New clinical data impact our understanding of interferon gamma release assays, the HIV-tuberculosis interaction, immune reconstitution inflammatory syndrome, and extremely drug-resistant tuberculosis. The protean presentations of pulmonary and extrapulmonary tuberculosis continue to challenge the clinician, as does the growing list of nontuberculous mycobacterial pathogens. Epidemiologic issues include airline-associated infection, the explosion of tuberculosis in areas of the developing world, and the critical roles of the World Health Organization and departments of public health in tuberculosis control.

We hope that this text continues to provide a complete and user-friendly resource for everyone—clinician, scientist, epidemiologist—involved in the diagnosis and treatment of tuberculosis and related infections.

I am grateful for the guidance, wisdom, and professionalism of the staff at ASM Press, particularly Christine Charlip, Megan Angelini, and Greg Payne.

David Schlossberg, MD, FACP

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