

# PATHOGENESIS OF HUMAN PULMONARY TUBERCULOSIS

INSIGHTS FROM THE RABBIT MODEL

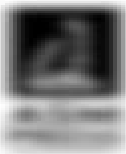
MATTHEW M. CHANDRASEKAR, DSc, MEd, PhD, DSc

Center for Tuberculosis Research

Departments of Environmental Health Sciences, Molecular Microbiology  
and Immunology, and Epidemiology, Bloomberg School of Public Health

Department of Pathology, School of Medicine

Johns Hopkins University, Baltimore, Maryland 21205



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# Pathogenesis Of Human Pulmonary Tuberculosis Insights From The Rabbit Model

**AW Rasmussen**



## **Pathogenesis Of Human Pulmonary Tuberculosis Insights From The Rabbit Model:**

**Pathogenesis of Human Pulmonary Tuberculosis** Arthur M. Dannenberg, 2006 A review and update of the contributions to the study of the experimental pathology of tuberculosis by the author and Max B Lurie **A Color Atlas of Comparative Pathology of Pulmonary Tuberculosis** Franz Joel Leong, Veronique Dartois, Thomas Dick, 2016-04-19 An annual death toll of 2 million coupled with rising drug resistance highlights the need for the development of new drugs better diagnostics and a tuberculosis TB vaccine Addressing these key issues A Color Atlas of Comparative Pathology of Pulmonary Tuberculosis introduces TB histopathology to the non histopathologists students scientists *Tuberculosis, Leprosy and Mycobacterial Diseases of Man and Animals* Harshini Mukundan, Mark Chambers, Ray Waters, Michelle Larsen, 2015-09-28 Mycobacteria are bacterial pathogens which cause diseases in humans and non human animals This monograph will primarily cover the most important and widely researched groups of mycobacteria members of the Mycobacterium tuberculosis complex MTC and Mycobacterium leprae across a wide range of host species M tuberculosis and M bovis are particularly relevant with the increasing drug resistance and co infection with HIV associated with M tuberculosis and the possible cross infection of badgers and cattle associated with M bovis This book will provide a reference for researchers working in different fields creating a work which draws together information on different pathogens and by considering the diseases in a zoonotic context provides a One Health approach to these important groups of diseases **Delivery Systems for Tuberculosis Prevention and Treatment** Anthony J. Hickey, 2016-11-14 Provides a review of novel pharmaceutical approaches for Tuberculosis drugs Presents a novel perspective on tuberculosis prevention and treatment Considers the nature of disease immunological responses vaccine and drug delivery disposition and response Multidisciplinary appeal with contributions from microbiology immunology molecular biology pharmaceuticals pharmacokinetics chemical and mechanical engineering *Tuberculosis and Nontuberculous Mycobacterial Infections*, David Schlossberg, 2011-05-24 The most popular reference among physicians for understanding and treating tuberculosis Presents the current science and tools available in the fight against tuberculosis including drug resistant forms from international experts Features the latest preventive strategies including vaccine development and explores the effect of tuberculosis on organ systems and value of surgery Examines present day epidemiologic and public health issues including airline associated infection tuberculosis in the developing world and the role of the World Health Organization and departments of public health *Tuberculosis and Nontuberculous Mycobacterial Infections* David L. Schlossberg, 2020-07-10 TUBERCULOSIS AND NONTUBERCULOUS MYCOBACTERIAL INFECTIONS TUBERCULOSIS AND NONTUBERCULOUS MYCOBACTERIAL INFECTIONS SEVENTH EDITION Complete coverage of every aspect of tuberculosis and related mycobacterial infections Tuberculosis appears to be as old as humanity itself Despite many advancements since the 1882 identification of Mycobacterium tuberculosis as the causative agent of tuberculosis it remains one of the top 10 causes of death worldwide and threatens the effectiveness of our

therapeutic arsenal In 2015 1.8 million people died of tuberculosis and almost half a million new cases of multidrug resistant tuberculosis were diagnosed For Tuberculosis and Nontuberculous Mycobacterial Infections Dr Schlossberg assembled an international team of experts to write about nearly every facet of the prevention diagnosis and treatment of tuberculosis and nontuberculous mycobacterial infections In addition to presenting the latest clinical data epidemiological findings and policy and strategy recommendations of the World Health Organization four new chapters cover topics of critical importance The role of therapeutic drug monitoring in mycobacterial infections The public health issues of refugees and migrants and their exposure and transmission of tuberculosis resulting from humanitarian crises Diabetes mellitus as a significant risk factor for tuberculosis The increased risk of tuberculosis reactivation in people taking tumor necrosis factor alpha inhibitors and other biopharmaceuticals Other chapters provide detailed information on the clinical public health and policy aspects of tracking and treating tuberculosis including The many presentations of tuberculosis from pulmonary to ocular and cardiovascular to urogenital The complications that tuberculosis and antituberculosis therapy cause to the hematologic and endocrine systems Tuberculosis during pregnancy and in infants and children Treatment of multidrug resistant tuberculosis and extensively drug resistant tuberculosis Development of new vaccines Nontuberculous infections caused by mycobacteria found throughout our environment The seventh edition of Tuberculosis and Nontuberculous Mycobacterial Infections is an essential resource for anyone working to prevent and treat tuberculosis and associated infections from infectious disease specialists and pulmonologists to scientists policymakers and epidemiologists A truly modern book that offers students practitioners and all readers the chance for a full immersion into the science of tuberculosis MARIO RAVIGLIONE MD Global TB Programme World Health Organization It is difficult to improve on an already excellent book but Dr Schlossberg and colleagues have done it again BURKE A CUNHA MD MACP Infectious Disease Division Winthrop University Hospital This comprehensive book remains the most popular reference among physicians treating tuberculosis LEONID HEIFETS MD National Jewish Hospital from a previous edition This book meets a demand for timely information constitutes a ready and useful reference for general internists and primary care physicians ANNALS OF INTERNAL MEDICINE from a previous edition If you are looking for online access to the latest clinical microbiology content please visit [www.wiley.com/learn/clinmicronow](http://www.wiley.com/learn/clinmicronow) [HIV and Tuberculosis](#) Irini Sereti, Gregory P. Bisson, Graeme Meintjes, 2019-11-30 Globally HIV associated tuberculosis is one of the most important causes of infection related death accounting for one in every three HIV deaths and over 300 000 in 2017 alone The HIV epidemic has undermined tuberculosis control efforts in many countries around the world as the virus has important modifying effects on the pathogenesis diagnosis and treatment of TB The management of HIV associated TB is also complicated by rapid clinical progression immune reconstitution inflammatory syndrome drug drug interactions and shared toxicities The past two decades have yielded thousands of research publications and review articles on HIV associated TB HIV and Tuberculosis A Formidable Alliance consolidates this massive amount of data into a single resource With

contributions from myriad disciplines including epidemiology immunology public health and clinical medicine this book provides well rounded and thorough coverage that will appeal to researchers and clinicians alike

**Tuberculosis and the Tubercle Bacillus** William R. Jacobs, Jr., Helen McShane, Valerie Mizrahi, Ian M. Orme, 2020-07-15 Can today's innovative practices and molecular tools tame this ancient disease One third of the world's population is infected with tuberculosis TB with about 10 million new cases annually To combat TB and its agent *Mycobacterium tuberculosis* the World Health Organization launched The End TB Strategy which aims to slash the suffering and cost of TB by 2035 This makes the second edition of *Tuberculosis and the Tubercle Bacillus* edited by Jacobs McShane Mizrahi and Orme an extremely valuable resource for scientists and clinicians The editors have gathered their colleagues from around the world to present the latest on the molecular biology of *M. tuberculosis* and related species the host pathogen interactions that enable invasion and the host's immune response to *M. tuberculosis* infection The basic clinical and translational research presented in this book supports the goals of WHO's End TB Strategy by driving toward the development of effective vaccines rapid molecular diagnostics and anti TB drugs Creating an effective tuberculosis vaccine Understand the innate and adaptive immune response to *M. tuberculosis* infection its study in established animal models and how this information is being used to develop new vaccines against TB Formulating new antituberculosis drugs Learn the challenges and methods for evaluating new drugs in preclinical trials with a focus on drugs that work against persisters and those that act on the electron transport complex and ATP synthase of *M. tuberculosis* Overcoming the challenges of diagnosing tuberculosis Review new diagnostic tools that are simple rapid affordable specific sensitive and safe including molecular based diagnostic methods such as GeneXpert MTB RIF Using molecular genomic and bioinformatics tools to understand the biology and evolution of *Mycobacterium* Explore current research on the molecular mechanisms that *M. tuberculosis* uses to evade the immune system enter a state of nonreplicating persistence and become reactivated The second edition of *Tuberculosis and the Tubercle Bacillus* presents the latest research on a microorganism that is exquisitely well adapted to its human host This pathogen continues to confound scientists clinicians and public health specialists who will all find much valuable information in this comprehensive set of reviews

**American Evangelists and Tuberculosis in Modern Japan** Elisheva A. Perelman, 2020-01-21 Tuberculosis ran rampant in Japan during the late Meiji and Taisho years 1880s 1920s Many of the victims of the then incurable disease were young female workers from the rural areas who were trying to support their families by working in the new textile factories The Japanese government of the time however seemed unprepared to tackle the epidemic Elisheva A Perelman argues that pragmatism and utilitarianism dominated the thinking of the administration which saw little point in providing health services to a group of politically insignificant patients This created a space for American evangelical organizations to offer their services Perelman sees the relationship between the Japanese government and the evangelists as one of moral entrepreneurship on both sides All the parties involved were trying to occupy the moral high ground In the end an uneasy but

mutually beneficial arrangement was reached the government accepted the evangelists assistance in providing relief to some tuberculosis patients and the evangelists gained an opportunity to spread Christianity further in the country Nonetheless the patients remained a marginalized group as they possessed little agency over how they were treated Perelman captures the strategies that enabled Protestant missionaries to become a central force in treating tuberculosis and providing social services in prewar Japan Acting as moral entrepreneurs the medical missionaries deftly raised funds abroad gained support from the Japanese state gained converts and cultivated a corps of Japanese medical practitioners Sheldon Garon Princeton University author of *Molding Japanese Minds The State in Everyday Life* Based on a wide range of primary and secondary sources this groundbreaking book traces evangelical Christianity and the work of medical missions in late nineteenth and early twentieth century Japan It is a must read for anyone interested in the history of Christianity disease medicine or public health in modern Japan William Johnston Wesleyan University author of *The Modern Epidemic A History of Tuberculosis in Japan*

**Understanding Tuberculosis** Pere-Joan Cardona, 2012-02-17 Mycobacterium tuberculosis as recent investigations demonstrate has a complex signaling expression which allows its close interaction with the environment and one of its most renowned properties the ability to persist for long periods of time under a non replicative status Although this skill is well characterized in other bacteria the intrinsically very slow growth rate of Mycobium tuberculosis together with a very thick and complex cell wall makes this pathogen specially adapted to the stress that could be generated by the host against them In this book different aspects of these properties are displayed by specialists in the field

*Forensic Neuropathology* Jan E. Leestma, Sanford Bon, 2008-10-14 Over the past 30 years as both forensic pathology and neuropathology have grown in sophistication the two specialties have forged a heightened level of interaction Reflecting the vast increase in knowledge and scientific progress in the past two decades *Forensic Neuropathology Second Edition* examines the new developments that have arisen since

**Tuberculosis** Bassam Mahboub, Mayank Vats, 2013-03-20 Data are rapidly accumulating from all over the world regarding the efficacy of standardized treatment regimens for drug sensitive drug resistant TB and latent TB infection While we are facing the menace of multi drug resistant TB MDR TB extensively drug resistant tuberculosis XDR TB has emerged threatening to undermine global efforts at TB control Hence we have included chapters to cover all aspects of the diagnosis and management of MDR TB This book will cover all these developments in great detail With the widespread availability of internet globally various standard web resources available on TB have also been included so that the readers may get the comprehensive and updated guidelines from these resources The changing clinical presentation of TB advances in laboratory imaging diagnostic modalities therapeutic measures and emergence of MDR TB all suggest a pressing need to have a updated book on TB Furthermore while all physicians encounter the TB disease in their clinical practice there have been a lot of controversies and misconceptions over various issues for the diagnosis and management of TB Paucity of a well referenced updated standard book of TB has prompted us to undertake

this venture sharing the clinical experience of global experts of TB Our book contains chapters on epidemiology immune pathology diagnosis treatment and latest advances for TB highlighting the global perspective of tuberculosis World wide resurgence of MDR TB indicates that the battle against this foe of mankind will continue in the coming years TB still remains to be a research priority of paramount importance from medical social and financial aspects and we have attempted to highlight all the aspects for the treatment of TB We believe that this book will serve as a practical guide for the diagnosis and management of TB for practicing physicians especially pulmonologists and internists and all those who are involved in the management of TB

**Clinical Tuberculosis** Peter Barnes, Peter D. O. Davies, Stephen B Gordon, 2008-04-25 Over three previous editions Clinical Tuberculosis has established itself as an indispensable guide to all aspects of tuberculosis diagnosis and treatment This fully revised and updated fourth edition provides practical guidance to healthcare professionals involved in any aspect of patient management or disease control chapters are included on epidemiology pathology immunology disease presentation diagnosis treatment and management options The problem of TB associated with HIV infection is given special emphasis as are the increasing problems of multi drug resistant strains and environmentally opportunistic mycobacteria Chapter authors have been hand picked to represent the most up to date thinking in their particular subject areas making Clinical Tuberculosis the essential reference work for the bookshelves of respiratory physicians infectious disease specialists public health workers and other individuals involved in the management and control of tuberculosis worldwide

Mycobacterium Wellman Ribón, 2018-06-20 This book arose from the combination of diverse areas of knowledge experience research and points of view that try to demonstrate that mycobacteria are a complex science and very relevant to scientific studies that affect the human being in the world Sophisticated techniques for improving human health do not guarantee that the battle against mycobacteria has been won since tuberculosis mycobacteriosis and leprosy are a daily challenge in the world The book includes contributions made by prestigious experts and research groups in different areas of mycobacteria and they have contributed new perspectives of their area giving a comprehensive important and fascinating emphasis of this field that continues to offer challenges that lead various disciplines to understand their biology and pathogenicity It is hoped that these chapters will be very useful for learning and discussion

Animal Biotechnology Ashish S. Verma, Anchal Singh, 2013-11-04 Animal Biotechnology introduces applications of animal biotechnology and implications for human health and welfare It begins with an introduction to animal cell cultures and genome sequencing analysis and provides readers with a review of available cell and molecular tools Topics here include the use of transgenic animal models tissue engineering nanobiotechnology and proteomics The book then delivers in depth examples of applications in human health and prospects for the future including cytogenetics and molecular genetics xenografts and treatment of HIV and cancers All this is complemented by a discussion of the ethical and safety considerations in the field Animal biotechnology is a broad field encompassing the polarities of fundamental and applied research including molecular

modeling gene manipulation development of diagnostics and vaccines and manipulation of tissue Given the tools that are currently available and the translational potential for these studies animal biotechnology has become one of the most essential subjects for those studying life sciences Highlights the latest biomedical applications of genetically modified and cloned animals with a focus on cancer and infectious diseases Provides firsthand accounts of the use of biotechnology tools including molecular markers stem cells and tissue engineering *Innovation, Communication and Engineering* Teen-Hang Meen, Stephen Prior, Artde Donald Kin-Tak Lam, 2013-10-08 This volume represents the proceedings of the 2013 International Conference on Innovation Communication and Engineering ICICE 2013 This conference was organized by the China University of Petroleum Huadong East China and the Taiwanese Institute of Knowledge Innovation and was held in Qingdao Shandong P R China October 26 November 1 2013 The conference received 653 submitted papers from 10 countries of which 214 papers were selected by the committees to be presented at ICICE 2013 The conference provided a unified communication platform for researchers in a wide range of fields from information technology communication science and applied mathematics to computer science advanced material science design and engineering This volume enables interdisciplinary collaboration between science and engineering technologists in academia and industry as well as networking internationally Consists of a book of abstracts 260 pp and a USB flash card with full papers 912 pp Persister Cells and Infectious Disease Kim Lewis, 2019-11-13 This volume is a collection of chapters from the leading experts in the relatively new and burgeoning field of persister cell studies Persisters play a leading role in the recalcitrance of chronic infections and enable the development of classical antibiotic resistance The focus of the book is on studies that provide an understanding of the mechanisms of persister formation antibiotic tolerance and role in disease at the molecular level

*Forensic Neuropathology, Third Edition* Jan E. Leestma, 2014-06-23 The field of forensic neuropathology covers such controversial topics as the effects of repeated brain trauma in football players and how babies probably cannot die from being shaken Jan Leestma is one of the most respected voices in this area A timely update to his classic reference *Forensic Neuropathology Third Edition* presents an encyclopedic exposition of neuropathological conditions that may have forensic import Reflecting the latest research this edition includes expanded sections on multiple trauma one punch one hit arterial injuries and the physiology of respiratory control It presents new perspectives and rules regarding expert testimony and evidence admissibility occasioned by Daubert and related Supreme Court cases The book explores how these rulings affect forensic pathologists neuropathologists and other potential experts as well as how they interact with the legal system Several chapters examine the mechanisms and pathophysiology of neuropathological conditions and discuss the biomechanical basis for neurological injury Where possible aging and dating methodology is included for various processes More than 325 updated full color illustrations complement the text along with diagrams tables and figures that illustrate the textual material and can be useful as exhibits in court An extensive bibliography provides background information and facilitates further



research     *Mycobacterial Skin Infections* Domenico Bonamonte, Gianni Angelini, 2017-09-04 This well illustrated book is a comprehensive guide to the cutaneous clinical presentations of mycobacterial infections The *Mycobacterium* genus includes over 170 species nontuberculous mycobacteria NTM having been added to the obligate human pathogens such as *M tuberculosis* and *M leprae* NTM are widely distributed in the environment with high isolation rates worldwide the skin is a major target with variable clinical manifestations A current resurgence in tuberculosis is aggravated by the synergy with human immunodeficiency virus the breakdown of health care systems and the rise in multidrug resistant disease as the incidence of leprosy remains stable at around 250 000 new cases annually regardless of effective antibiotic therapy Presentations of various cutaneous infections caused by mycobacteria may be overlooked by clinicians owing the lack of familiarity with tuberculosis leprosy and the related NTM clinical features This handy guide will help the dermatologist to spot the different clinical manifestations make a prompt diagnosis and apply effective treatment     **Towards Host-Directed Drug Therapies for Infectious and Non-Communicable Diseases** Frank Brombacher, Abhay Satoskar, Alessandro Marcello, 2019-11-25

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