

mysterious and, for many patients and clinicians alike, a perplexing challenge to understand and manage.

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Asthma and Infections. Richard J Martin and E Rand Sutherland, editors. *Lung Biology in Health and Disease*, volume 238, Claude Lenfant, executive editor. New York: Informa Healthcare. 2010. Hard cover, 256 pages, \$249.95.

Not only has the prevalence of asthma increased over the last 50 years, but also the challenges of treating people with asthma and understanding asthma continue. Indeed, despite the strong association between early-life lower-respiratory-tract infections and childhood asthma, there continues to be difficulty predicting which children with severe lower-respiratory-tract infection will develop asthma. This clinical challenge translates into variability in care of children with wheezing illnesses and hampers the ability of researchers to route high-risk children into future treatment trials. In adult medicine there is a growing appreciation that asthma is a heterogeneous disease requiring different treatment strategies, especially for those adults with steroid-resistant asthma. No matter the age of the person with asthma, having a better understanding of the role of infections and allergy in this common disease remains central to improving our clinical care. It is in this context that the editors, Martin and Sutherland, along with internationally recognized contributors, have written a cogent and comprehensive book entitled, **Asthma and Infections**. For this review, I have divided the book into 3 main ideas: development of asthma; the interaction between viruses, bacteria, and allergens; and host defense mechanisms. Using this organizational structure, I discuss each of the 12 chapters.

Although several chapters in the book examine the development of asthma, the 3 chapters most clearly dedicated to this issue are Liu's chapter on the hygiene hypothesis, Gem's chapter on viral respiratory infections in infancy, and Martinez's chapter on susceptibility to viral infections. Liu's review of the hygiene hypothesis is well done and balanced. Indeed, the concluding remarks

summarize and emphasize the complexity of microbial exposures (ie, dose, timing, diversity, pathogenicity, genetics) and their association with the allergic march. The virology chapter discusses human rhinovirus infections, postnatal lung development, innate immunity, and need for intervention trials. This chapter is excellent and emphasizes the importance of infant respiratory infections as well as the unmet need of preventive treatments, especially for rhinovirus. The susceptibility chapter focuses on studies examining the phenotype of asthma that begins in early childhood, is associated with aeroallergen sensitization, and generally persists into adulthood.

In these chapters the reader may be confused by the lack of unifying data about asthma pathogenesis. For example, in contrast to the content in the hygiene hypothesis chapter, the viral respiratory chapter mentions that there is no evidence that viral respiratory infections protect against either allergies or asthma. Indeed, the relative importance of early childhood wheezing and/or allergic sensitization in the development of asthma in school age children is unclear. Specifically, in the pathway from infantile wheezing illness to asthma, it is unclear if viral infections are: causal; an indication of asthma susceptibility; or trigger events that eventually lead to asthma in a genetically susceptible child. For the clinician and researcher, distinguishing those children with wheezing who will eventually develop asthma from those who will have "transient" wheezing is challenging. And once a child or adult is diagnosed as having asthma, there are multiple possible phenotypes. Despite these unanswered questions, the 3 chapters on asthma development do an outstanding job presenting the relevant data and using language that is accessible both to clinicians and researchers.

The majority of the book is devoted to the role viruses, bacteria, and allergens play in asthma exacerbations and chronic asthma. The importance of asthma exacerbations is clear; they have the greatest effect on loss of function, healthcare utilization, and morbidity (including death). And acute respiratory infections are the leading cause of exacerbations. Although viruses cause the majority of these infections, bacteria are also a cause. Indeed, in their chapter on exacerbations, Sumino and Walter provide outstanding tables detailing the studies that have examined the prevalence of viral-induced exacerbations, the individual viruses, prevalence of

Chlamydomphila pneumoniae and *Mycoplasma pneumoniae* in exacerbations, and the prevalence of these pathogens in children and adults with and without asthma. The 5 tables in this chapter are clear and comprehensive.

In people with chronic asthma there are important interactions between bacteria, viruses, and allergens. In the book, one chapter is devoted to the interaction between bacteria and allergens, and a separate chapter discusses viruses and allergens. The chapter on bacteria and allergens has a short review of the hygiene hypothesis, which focuses on the importance of the timing of allergen exposure, and a comprehensive review of the role of atypical bacteria in asthma. Furthermore, this chapter briefly discusses treatment for atypical bacteria and the existing gaps in research knowledge in this area. The subsequent chapter details the interaction between viruses and the allergic response, reviewing some of the data about the association between early-life respiratory syncytial virus, human rhinovirus, and influenza lower-respiratory-tract infection and later asthma. The text also reviews interesting data that palivizumab decreases the occurrence of later recurrent wheezing. Although, some may find the intermittent repetitiveness of the text a limitation, the studies that are discussed in more than one chapter are not only relevant to each chapter but also are presented differently and deserve the reader's attention.

The next section relates to defenses against infection: pulmonary surfactant, host immune responses, and antibiotics. The chapter by Numata and Voelker on pulmonary surfactant fits the model of translational science. The chapter begins with a basic science review of surfactant and then progresses to surfactant's functions, its dysfunction in asthma, and culminates with the somewhat disappointing surfactant clinical trials. The host-defense section, as expected, leans more toward basic science, but this information is clearly critical to understanding better the asthma and infection story and the pathophysiology of asthma. The chapter focuses on both innate and adaptive immunity and the dysfunction of these systems in people with asthma. This section complements parts of the exacerbation chapter by Sumino and Walter, since impaired host defenses may be one of the mechanisms of increased susceptibility to certain respiratory infections in people with asthma.

Of relevance to the host defense/antibiotic section are 2 intriguing retrospec-

tive case-control studies discussed in the first chapter of the book. These studies demonstrate that children and adults with asthma are more likely to have invasive *Streptococcus pneumoniae* disease. This finding is clearly important for clinicians and deserves further attention from researchers. Not discussed in the text, but also of relevance and interest, is a study published in *Nature Medicine*, showing, in a double-blind randomized controlled trial with over 37,000 immunized South African children, that the 9-valent pneumococcal conjugate vaccine reduced clinically diagnosed pneumonias due to both bacteria and viruses.¹ In other words, a portion of viral pneumonia was preventable via a bacterial vaccine. Whether these data extend to the specific population of children or adults with asthma would be of interest.

The last chapter focuses mostly on antimicrobial treatment of atypical pathogens. The chapter does an excellent job discussing the role of atypical organisms in both asthma exacerbations and chronic asthma. This discussion primes the reader for the summaries of 3 exacerbation antibiotic trials. The Telithromycin, Chlamydomypha, and Asthma Trial (TELICAST) study, discussed in previous chapters, is appropriately discussed again in this chapter. Furthermore, the immunomodulatory role of antibiotics is reviewed in detail. The authors, Howell and Kraft, conclude that treatment with macrolide antibiotics may benefit people with chronic asthma or those with non-eosinophilic asthma.

There is also a chapter on laboratory diagnosis of respiratory infections. Although only one section of the chapter is devoted to multiplex polymerase-chain-reaction assays, this new diagnostic technique is important and could have received more attention. Indeed, if and when these multiplex assays become less costly and more widely used, we are likely to learn much more about the short-term and long-term implications of the diverse viruses associated with lower-respiratory-tract infection and asthma. Furthermore, these assays may allow clinicians to more rapidly diagnose the important atypical organisms discussed throughout this book.

Taken together, the chapters in **Asthma and Infections** work well and are comprehensive. The main limitation of the text is the lack of organizing themes to structure the book. An improved structure may have

helped the reader to better organize his or her thoughts about this complex topic. Furthermore, an overarching structure for the chapters within the book may have helped reduce the existing overlap in material. In general, however, the text is an excellent review of complex data and ideas. For clinicians who care for children or adults with asthma this book discusses data about presentation, diagnosis, and therapy in a clear and evidenced-based manner. For researchers this book may help stimulate ideas for future investigations, especially considering that the chapters are written by leaders in the field.

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Group Leadership Skills for Nurses and Health Professionals, 5th edition. Carolyn Chambers Clark EdD RN. New York: Springer. 2009. Hard cover, 376 pages, \$50.

Development of leadership skills is often difficult for many people. Once one is able to advance those skills, moving to the next level and developing group leadership skills presents a new challenge to any leader. Too often, leaders want to dictate the flow of a group, which can lead to a breakdown in communication and unrest among a group. Recognizing and intervening in group interactions in a timely fashion is imperative to maximizing group dynamics. A good group leader is one who can read the dynamics of the group and facilitate moving forward to the common goal.

Clark's **Group Leadership Skills for Nurses and Health Professionals** provides a guide to establishing a group, identifying barriers of group successfulness, and facilitating interventions to maximize group interaction.

In the initial chapters of this book, Clark provides a simple but detailed introduction to group work that is essential to understanding concepts of group interaction. It is clear that Clark has an excellent understanding of group dynamics and has thoroughly studied and researched group processes. She dis-

cusses what makes groups successful and what contributes to group dysfunction. These chapters address group conflict, apathy, tension and anxiety—all factors that can affect reaching group goals. Clark addresses these on an individual basis and presents strategies to overcome these obstacles.

Once the foundation has been set, the book helps the reader develop the group through pre-planning, beginning steps, and ways to guide the group. As the reader moves into this section, one continues to get an understanding of what helps a group reach its goals and what issues can continue to provide barriers to a group moving forward.

As the book moves forward, role modeling of group leadership is discussed and development of skills to establish an assertive approach helps the reader better understand what is involved in running a group.

At times, the reader may have questions as to what type of groups the book focuses on, and offers ideas such as back rubs, which may make some people uncomfortable. However, in the end, Clark does a nice job of demonstrating strategies to work with all types, including organizational groups, therapy groups, focus groups, as well as others.

Throughout the book, Clark provides the reader an opportunity to reflect on group dynamics they have experienced, to serve as a catalyst to improved learning. These "Group Leader Challenges" ask the reader to pause and reflect on their own experience, or to review and discuss possible ways to work through group dynamics. These challenges are interspersed throughout each chapter, and although not all are helpful, they do give the reader a chance to increase the learning opportunities from each chapter.

With the simulated exercises at the end of each chapter, readers can attempt to advance their knowledge. As simulation becomes more prominent in the medical profession, it is not limited to just technical skills, but has the ability to be a catalyst to improved group skills through practice and debriefings.

This book will provide an excellent foundation for group leaders, from novice to advanced. Every group leader will be able to take something away from this book and use it in their practice.

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