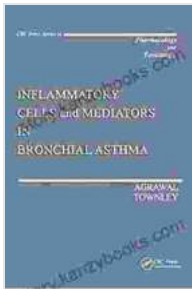


Inflammation and Bronchial Asthma: A Comprehensive Handbook

Bronchial asthma is a chronic respiratory disease characterized by airway inflammation, reversible bronchoconstriction, and increased mucus production. It affects millions of people worldwide and is a major cause of morbidity and mortality. The inflammatory response in bronchial asthma involves a complex interplay of various inflammatory cells and mediators, which contribute to the development and progression of the disease.



Inflammatory Cells and Mediators in Bronchial Asthma (Handbooks in Pharmacology and Toxicology Book 1)

by Malin Svensson

★★★★☆ 4.5 out of 5

Language : English
File size : 2305 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 268 pages



This handbook provides a comprehensive overview of the role of inflammatory cells and mediators in bronchial asthma. It covers the latest research findings on the cellular and molecular mechanisms underlying the inflammatory response in asthma, and discusses the therapeutic implications of targeting these mechanisms.

Inflammatory Cells in Bronchial Asthma

A variety of inflammatory cells are involved in the pathogenesis of bronchial asthma, including:

- **Mast cells:** Mast cells are tissue-resident cells that release a variety of inflammatory mediators, including histamine, tryptase, and leukotrienes. These mediators contribute to bronchoconstriction, mucus production, and airway inflammation.
- **Eosinophils:** Eosinophils are white blood cells that are recruited to the airways in response to inflammation. They release a number of cytotoxic mediators, including eosinophil cationic protein and major basic protein, which can damage airway epithelium and contribute to airway remodeling.
- **Neutrophils:** Neutrophils are white blood cells that are also recruited to the airways in response to inflammation. They release a variety of inflammatory mediators, including reactive oxygen species and proteases, which can contribute to airway damage.
- **Lymphocytes:** Lymphocytes are white blood cells that play a key role in the adaptive immune response. In bronchial asthma, T lymphocytes and B lymphocytes are both involved in the production of inflammatory cytokines and antibodies, which contribute to the inflammatory response.

Inflammatory Mediators in Bronchial Asthma

A variety of inflammatory mediators are involved in the pathogenesis of bronchial asthma, including:

- **Cytokines:** Cytokines are small proteins that are produced by immune cells and regulate the inflammatory response. In bronchial asthma, a

number of cytokines are involved, including interleukin-4, interleukin-5, interleukin-13, and tumor necrosis factor-alpha.

- **Chemokines:** Chemokines are small proteins that attract immune cells to sites of inflammation. In bronchial asthma, a number of chemokines are involved, including eotaxin, RANTES, and MCP-1.
- **Lipid mediators:** Lipid mediators are a group of molecules that are derived from lipids. In bronchial asthma, a number of lipid mediators are involved, including leukotrienes, prostaglandins, and thromboxanes.

Therapeutic Implications

The inflammatory response in bronchial asthma provides a number of potential targets for therapeutic intervention. A variety of drugs are available to target different inflammatory cells and mediators, including:

- **Cromolyn sodium and nedocromil sodium:** These drugs are mast cell stabilizers that prevent the release of inflammatory mediators from mast cells.
- **Leukotriene modifiers:** These drugs block the production or action of leukotrienes, which are potent inflammatory mediators.
- **Inhaled corticosteroids:** These drugs are potent anti-inflammatory agents that reduce the production of inflammatory mediators and suppress the inflammatory response.
- **Biologic therapies:** These drugs target specific inflammatory cytokines or chemokines and block their action.

Inflammation plays a central role in the pathogenesis of bronchial asthma. A variety of inflammatory cells and mediators are involved in the inflammatory response, and these provide a number of potential targets for therapeutic intervention. This handbook provides a comprehensive overview of the role of inflammatory cells and mediators in bronchial asthma, and discusses the therapeutic implications of targeting these mechanisms.

This handbook is an essential resource for researchers and healthcare professionals who are interested in the pathogenesis and treatment of bronchial asthma.

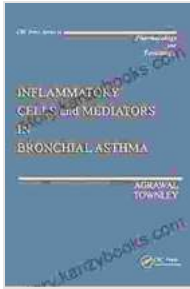
References

1. Barnes, P. J. (2016). Inflammatory mediators in asthma: an update. *Pharmacological Reviews*, 68(2),523-549.
2. Holgate, S. T., & Polosa, R. (2008). Inflammatory cells and mediators in asthma. *Journal of Allergy and Clinical Immunology*, 121(s1),S1-S7.
3. Lambrecht, B. N., & Hammad, H. (2009). The role of inflammatory cells in asthma. *Annual Review of Immunology*, 27, 323-342.
4. Pawankar, R., & Canonica, G. W. (2015). Inflammatory cells and mediators in asthma. *World Allergy Organization Journal*, 8(1),28.
5. Wark, P. A., & Wardlaw, A. J. (2004). Mast cells and airway inflammation. *Current Allergy and Asthma Reports*, 4(6),444-450.

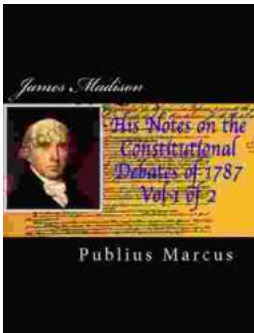
Inflammatory Cells and Mediators in Bronchial Asthma (Handbooks in Pharmacology and Toxicology Book 1)

by Malin Svensson

★★★★☆ 4.5 out of 5

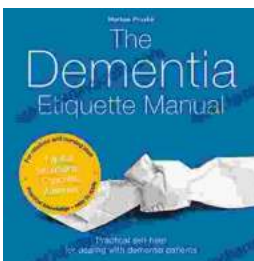


Language : English
File size : 2305 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Print length : 268 pages



James Madison: His Notes on the Constitutional Debates of 1787, Vol. I

James Madison's Notes on the Constitutional Debates of 1787 are a vital source for understanding the creation of the United States Constitution. This...



The Dementia Etiquette Manual: A Comprehensive Guide to Understanding and Caring for Persons with Dementia

If you're like most people, you probably don't know much about dementia. That's understandable. Dementia is a complex and challenging condition that affects...