Evolving asthma management: Therapies, biologics, digital solutions.

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Introduction

This article explores the significant role of long-acting muscarinic antagonists (LAMAs) in managing asthma, especially for patients whose symptoms remain inadequately controlled despite using inhaled corticosteroids and long-acting beta-agonists. It systematically reviews the current evidence regarding their efficacy, safety profile, and potential future applications, positioning them as a valuable add-on therapy in complex asthma cases.[1]

This meta-analysis investigates the potential link between inhaled corticosteroid (ICS) use and the risk of pneumonia in patients with chronic obstructive pulmonary disease (COPD) and asthma. By synthesizing data from randomized controlled trials, it aims to provide clarity on the safety implications of ICS in these respiratory conditions, helping clinicians weigh the benefits of inflammation control against the potential for adverse events.[2]

This systematic review assesses the real-world effectiveness of various biologic therapies used for severe asthma. It moves beyond controlled trial settings to provide a comprehensive picture of how these advanced treatments, such as omalizumab, mepolizumab, benralizumab, and dupilumab, perform in routine clinical practice, offering insights into their impact on patient outcomes and quality of life.[3]

This review provides a detailed examination of the role of bronchodilators in asthma management. It covers the different classes of bronchodilators, including short-acting and long-acting beta-agonists and muscarinic antagonists, explaining their mechanisms of action, clinical indications, and how they fit into current asthma treatment guidelines to alleviate bronchoconstriction and improve airflow.[4]

This systematic review and meta-analysis investigates the effectiveness of digital health solutions, such as mobile applications and telehealth platforms, in improving asthma management. It evaluates how these technologies impact patient outcomes, including symptom control, rates of exacerbation, and overall quality of life, highlighting their potential as supplementary tools in contemporary asthma care.[5]

This systematic review and meta-analysis focuses on the management of acute severe asthma exacerbations in adults. It evaluates the efficacy of various interventions, including pharmacological treatments and supportive care strategies, in improving respiratory function, reducing the need for hospitalization, and enhancing patient recovery during critical asthma events.[6]

This article revisits the benefits and potential risks associated with inhaled corticosteroids (ICS) in asthma therapy. It underscores their fundamental role in controlling airway inflammation and preventing exacerbations, while also addressing concerns regarding systemic side effects and strategies for optimizing ICS delivery and dosage to maximize therapeutic benefits and minimize adverse outcomes.[7]

This piece discusses the evolution of asthma management in the current era dominated by biologic therapies. It emphasizes the shift towards personalized treatment approaches, where patient phenotypes and endotypes guide the selection of specific biologics to achieve superior disease control, reduce exacerbation frequency, and improve overall patient quality of life.[8]

This review explores emerging therapies for severe asthma, providing insights into novel therapeutic agents, including small molecule inhibitors and biologics in the development pipeline. It delves into their unique mechanisms of action and discusses their potential to address the significant unmet needs of patients who remain unresponsive to conventional and currently available treatments.[9]

This article serves as a practical guide to understanding, diagnosing, and effectively managing exercise-induced bronchoconstriction (EIB). It covers both pharmacological interventions, such as pre-exercise inhaled bronchodilators, and non-pharmacological strategies, offering clear recommendations to help individuals with asthma or EIB maintain physical activity without experiencing debilitating respiratory symptoms.[10]

Conclusion

Asthma management encompasses a diverse array of therapeutic strategies aimed at controlling symptoms, preventing exacerbations, and improving patient quality of life. Long-acting mus-

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carinic antagonists (LAMAs) are crucial as an add-on therapy for patients with inadequately controlled asthma, even when already on inhaled corticosteroids and long-acting beta-agonists. Inhaled corticosteroids (ICS) remain a cornerstone, vital for managing airway inflammation, though clinicians must consider the balance between their benefits and potential risks, such as an increased risk of pneumonia in certain patient populations like those with chronic obstructive pulmonary disease (COPD) and asthma. Bronchodilators, including both short-acting and long-acting options, play a fundamental role by targeting bronchoconstriction to enhance airflow. The landscape of severe asthma treatment has dramatically shifted with the advent of biologic therapies. These advanced treatments—like omalizumab, mepolizumab, benralizumab, and dupilumab—demonstrate significant real-world effectiveness, moving beyond controlled trial settings to show tangible improvements in patient outcomes. This shift emphasizes personalized treatment, where patient-specific characteristics guide the selection of biologics for optimal disease control. Looking ahead, emerging therapies for severe asthma, including novel small molecule inhibitors, promise to address the significant unmet needs of patients who do not respond to existing treatments. Beyond pharmacotherapy, digital health solutions, from mobile applications to telehealth platforms, are emerging as effective supplementary tools, enhancing symptom control and reducing exacerbation rates. Practical guidance is also available for specific challenges like exercise-induced bronchoconstriction (EIB), offering both medication and lifestyle adjustments to allow continued physical activity. Lastly, there's ongoing research and reviews dedicated to optimizing the management of acute severe asthma exacerbations, focusing on interventions that improve respiratory function and minimize hospitalization needs. The overall trend highlights a comprehensive, evolving, and patient-centered approach to asthma care.

References

1. Marwan A, Peter JB, Alberto P. Long-acting muscarinic antagonists in asthma: a review of current evidence and future perspectives. *Eur Respir Rev.* 2021;30(161):210080.
2. Yu W, Ming Y, Yu Y. Inhaled corticosteroids and risk of pneumonia in patients with chronic obstructive pulmonary disease and asthma: a meta-analysis of randomized controlled trials. *Ther Adv Respir Dis.* 2020;14:1753466620972322.
3. David P, Francis T, Hamdan AJ. Real-world effectiveness of biologic therapies in severe asthma: *A systematic review. J Allergy Clin Immunol Pract.* 2021;9(2):746-764.e11.
4. Bradley EC, Alberto P, *Dave S. The role of bronchodilators in the management of asthma. Respir Med.* 2019;153:27-35.
5. Salome L, Kara KBRB, Dave S. Digital health solutions for asthma management: A systematic review and meta-analysis. *ERJ Open Res.* 2021;7(4):00723-2021.
6. Hwee Fung L, Kian ST, Kian CL. Management of acute severe asthma exacerbations in adults: A systematic review and meta-analysis of interventions. *J Asthma.* 2023;60(1):20-33.
7. Helen KR, Ian DP, Peter JB. Inhaled corticosteroids in asthma: *Benefits and risks revisited. ERJ Open Res.* 2022;8(3):00216-2022.
8. Guy GB, Gerard HK, Michael EW. Asthma management in the era of biologics: *Personalized treatment approaches. Lancet Respir Med.* 2023;11(4):367-380.
9. David JJ, Niamh U, *Marek S. Emerging therapies for severe asthma. Allergy.* 2020;75(5):1074-1088.
10. Thor SH, Roland AC, Steven RS. Understanding and managing exercise-induced bronchoconstriction. *J Allergy Clin Immunol Pract.* 2020;8(8):2517-2525.

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