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A Short Note on how Biomarkers Detect Eosinophilic Asthma

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INTRODUCTION

Asthma is a complex chronic respiratory disease with multiple distinct phenotypes characterized by distinct immune-pathological pathways, clinical manifestations, physiology, comorbidities, biomarkers of allergic inflammation, and response to therapy. Because asthma patients respond differently to standard therapy, it is now common to examine the asthma phenotype for precise and targeted therapy. Several different clinical phenotypes of asthma have been proposed, such as: Eosinophilic asthma is one of the well-defined clinical phenotypes of asthma. Eosinophilic asthma is most common in adults with asthma over the age of 20, but it can also occur in children. It is a serious and persistent disease with frequent exacerbations, poor quality of life and poor prognosis [1]. Eosinophilic asthma is associated with more urgent emergency room visits, hospitalizations, and intubations and a history of near-fatal asthma in approximately 23% of patients. Biomarkers are defined as traits that are objectively measured and evaluated as indicators of normal biological processes, pathogenic processes, or pharmacological responses to therapeutic interventions. They are measurable substances used to study organ function and other aspects of health.

DESCRIPTION

Asthma has several distinct phenotypes and responds differently to specific therapies such as corticosteroids and newly introduced biologics. Biologics used to treat asthma are expensive. Therefore, attempts to identify specific readily available biomarkers can help predict clinical response and are essential for precisely targeted therapy [2]. In the diagnosis and management of patients with severe refractory asthma, biomarkers have been recommended to assess optimal maintenance ICS therapy, determine treatment adherence, guide the selection of targeted therapy, and predict and assess treatment response increase. Specific biomarkers useful in the diagnosis of eosinophilic asthma include sputum and blood eosinophil counts, fractionated exhaled nitric oxide serum periostin, dipeptidyl peptidase-4 and osteopontin. The number of eosinophils in sputum is usually calculated from induced sputum or broncho alveolar fluid and expressed as a percentage of eosinophils from total inflammatory cells [3]. Measurement of eosinophils in induced sputum and BAL fluid has been shown to be a reliable biomarker of eosinophilic airway inflammation. In fact, induced sputum is considered the non-invasive gold standard method for assessing airway inflammation in asthma to identify the inflammatory phenotype. ERS/ATS guidelines suggest that sputum induction can be used to treat severe asthma in specialized centres with in-house laboratories that are familiar with the art of sputum induction. Blood eosinophil count is an established biomarker for severe eosinophilic asthma. High blood eosinophil counts are associated with poor asthma control, increased risk of exacerbations, and readmission [4]. Patients with eosinophilic asthma have increased severe airway obstruction and longitudinal deterioration of lung function.

CONCLUSION

Eosinophilic asthma is a severe and persistent asthma phenotype with frequent exacerbations and hospitalizations. Laboratory findings show high sputum and blood eosinophil counts, and high serum levels of perisotin and dipeptidyl peptidase-4 increased levels of fractionated exhaled nitric oxide. They are responsible for eosinophilic airway inflammation, hyper reactivity and airway remodelling. Biomarkers such as sputum and blood eosinophil counts, exhaled nitric oxide fraction, serum periostin, dipeptidyl peptide-4, and osteopontin are currently used to guide the diagnosis and treatment of patients with eosinophilic asthma increase.

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CONFLICT OF INTEREST

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REFERENCES

1. Walsh GM (2018) Reslizumab in the treatment of severe eosinophilic asthma: An update. Immunotherapy 10(8): 695-698.
2. Chung KF (2012) Inflammatory biomarkers in severe asthma. Curr Opin Pulm Med 18(1): 35-41.
3. Saglani S (2017) Childhood severe asthma: New insights on remodelling and biomarkers. Paediatr Respir Rev 24: 11-13.
4. Katial RK (2012) Update on biomarkers in allergy and asthma. Preface. Immunol Allergy Clin North Am 32(3): 9.