

**STUDY OF URINARY LEUKOTRIENE E4
LEVELS IN CHILDEN WITH BRONCHIAL
ASTHMA**

Protocol

Submitted for Partial Fulfillment of Master Degree in Pediatrics

By

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Introduction

Asthma is a problem worldwide, with an estimated 300 million affected individuals (**Masoli ;et al., 2004**). Despite hundreds of reports on the prevalence of asthma in widely differing populations the lack of a precise and universally accepted definition of asthma makes reliable comparison of reported prevalence from different parts of the world problematic. Nonetheless, based on the application of standardized methods to measure the prevalence of asthma and wheezing illness in children and adults, it appears that the global prevalence of asthma ranges from 1% to 18% of the population indifferent countries (**Yan;et al.,2005**).

Asthma is a chronic inflammatory condition of the lung airways (**Tattersfield;et al., 2002**) in which many cells as (mast cells ,eosinophils , T-lymphocytes,) and cellular elements as (Cysteinyl-LTs ,cytokines, histamine,.....) play a role in airway hyper- responsiveness (**Cohn,et al., 2004**) , that lead to recurrent episodes of wheezing, breathlessness, chest tightness and coughing particularly at night or in early morning. These episodes are usually associated with widespread, but variable, airway obstruction within the lung that is often reversible either spontaneously or with treatment (**Barnes ;et al.,1998**)

Factors influencing the development and expression of asthma can be divided into those that cause the development of asthma which are the host factors (genetic, obesity and male sex)(**Busse; et al., 2001**) and those that trigger the asthma symptoms which are the environmental factors (allergens, infections, smoking, air pollution and diet (**Ober ;et al., 2005**) .

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One of this triggers which we will concern is Leukotrienes(LTs) as it play a central patho-physiological role in asthma particularly in specific subgroups of patients with asthma(**Lipkowitz ;etal.,2001**). Elevated Cysteinyl-LTs.LT concentrations have been detected in biological fluids, including broncho-alveolar lavage [BAL], sputum, urine and exhaled breath condensate (EBC) from patients with asthma. The Cysteinyl-LTs are likely to contribute to airway remodeling that characterizes persistent asthma (**Montuschi; et al., 2006**).

Leukotrienes contribute to the pathophysiology of asthma by causing or potentiating airflow obstruction, increased secretion of mucus and mucosal accumulation bronchoconstriction and infiltration of inflammatory cells in the airway wall (**Samuelsson, 2001**)

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AIM OF THE WORK

The aim of this study is to evaluate impact of urinary leukotriene e4 as a trigger in asthmatic children during acute asthma exacerbation.

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PATIENTS AND METHODS

This is a case control study ,we will be conducted on 60 asthmatic children with acute asthma exacerbation. And 20 healthy children as a control with the same age and sex . who will be attending to the emergency room in pediatric department of Benha university hospital .

Inclusion criteria:

- 1- Children aged 3-14 years.
- 2-Criteria of acute asthma exacerbation as: dyspnea, tachypnea, nasal flaring, and intercostals retractions in spite of standard therapy for asthma exacerbation

Exclusion criteria:

- 1- Other chronic chest, cardiovascular or neurological diseases.
- 2- Children below 3years or above 14 years.

Methods:

All included patients will be subjected to:

- a) Full medical history laying stress on symptoms of asthma exacerbation as difficulty in breathing, anxiety and agitation. Detailed drug history used in emergency department as bronchodilators and parental corticosteroids.
- b) Clinical examination: chest, heart &neurological examination.
- c) Measurement of leukotriene e4 in urine sample using EIA kits within the first 24hrs from the onset of acute asthma exacerbation after taking the parent consent.

Statistical design:

The collected data will be tabulated and analyzed by the suitable statistical method using computer program spss .

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Reference

1. **Masoli M, Fabian D, Holt S, Beasley R.** :The global burden of Asthma; executive summary of the GINA Dissemination Committee report. *Allergy* 2004;59(5):469-7
2. **Yan DC, Ou LS, Tsai TL, Wu WF, Huang JL.**: Prevalence and severity of symptoms of asthma, rhinitis, and eczema in 13- to 14-year-old children in Taipei, Taiwan. *Ann Allergy Asthma Immunol* 2005;95(6):579-85
3. **Busse WW, Lemanske RF, Jr.**: Asthma. *N Engl J Med* 2001;344(5):350-62.
- 4 **Ober C.** :Perspectives on the past decade of asthma genetics. *J Allergy Clin Immunol* 2005;116(2):274-8.
5. **Tattersfield AE, Knox AJ, Britton JR, Hall IP.**: Asthma. *Lancet* 2002;360(9342):1313-22.
6. **Cohn L, Elias JA, Chupp GL.** **Asthma:** mechanisms of disease persistence and progression. *Annu Rev Immunol* 2004;22:789
7. **Barnes PJ, Chung KF, Page CP.**: Inflammatory mediators of asthma: an update. *Pharmacol Rev* 1998;50(4):515-9

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8.Montuschi P,et al:Effect of a leukotriene receptor antagonist on exhaled leukotriene E4 and prostanoids in asthmatic children. J. Allergy Clin. Immunol. 2006, 118, 347–353

9.Lipkowitz Myron A. and Navarra Tova: (2001) The Encyclopedia of Allergies (2nd ed.) Facts on File, New York, p. 167, ISBN 0-8160-4404-X

10 .Samuelsson, Bengt (ed.) (2001) Advances in prostaglandin and leukotriene research: basic science and new clinical applications: 11th International Conference on Advances in Prostaglandin and Leukotriene Research: Basic Science and New Clinical Applications, Florence, Italy, June 4–8, 2000 Kluwer Academic Publishers, Dordrecht, ISBN 1-4020-0146-0

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