Serum Lipid Profile in Pediatric Bronchial Asthma

Thesis

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List of Abbreviations

Abb.	Full term

ABPA ..... *Allergic bronchopulmonary aspergillosis*
ACQ ..... *Asthma control questionnaire*
ACT ..... *Asthma control test*
AIDS ..... *Acquired immunodeficiency syndrome*
Apo-E ..... *Apolipoprotein*
ASM ..... *Airway smooth muscle*
BMI ..... *Body mass index*
CDC ..... *Center for Disease Control and Prevention*
CHILD ..... *Cardiovascular Health Integrated Lifestyle Diet*
CK ..... *Creatinine kinase*
COPD ..... *Chronic obstructive pulmonary disease*
CVD ..... *Cardiovascular diseases*
DM ..... *Diabetes mellitus*
ED ..... *Emergency department*
FACET ..... *Formoterol and Corticosteroids Establishing Therapy*
FDA ..... *Food and Drug administration*
FENO ..... *Fractional exhales nitric oxide*
FEV/FVC ratio .. *Forced expiratory volume/ forced vital capacity*
FEV1 ..... *Forced expiratory volume in 1 second*
FhX ..... *Family history*
FVC ..... *Forced viatal capacity*
GEMCAS ..... *The German Metabolic and Cardiovascular Risk Project*
GI ..... *Gastrointestinal*
GINA ..... *Global Initiative for Asthma*
HDL ..... *High density lipoprotein*
HDL-C ..... *High density lipoprotein cholesterol*

List of Abbreviations (Cont...)

Abb.	Full term
HIV	*Human immunodeficiency virus*
HMG-CoA	*The 3 –hydroxy-methyl-glutaryl-coenzyme*
IB	*Ipratropium bromide*
ICS	*Inhaled corticosteroid*
ICS/LABA	*Inhaled corticosteroid and long acting beta 2 agonist*
IgE	*Immunoglobulin E*
IgG	*Immunoglobulin G*
IL6	*Interleukin 6*
ISAAC	*International Study of Asthma and allergies in Childhood*
LABA	*Lomg cting beta 2 agonist*
LDL	*Low density lipoprotein*
LDL-C	*Low density lipoprotein cholesterol*
LTRA	*Leukotriene receptor antagonist*
Med	*Medium dose*
MMEF25-75	*Maximum mid expiratory flow*
N	*Number*
NAEPP	*National Asthma Education and Prevention Program*
NCEP	*The National Cholesterol E ducation Program*
NHANES	*The National Health and Nutrition Examination Survey*
NHLBI	*The National Heart, Lung and Blood Institue*
NO	*Nitric oxide*
OCS	*Oral corticosteroids*
P	*Propability of error*
PEF	*Peak expiratory flow*
Ppb	*Parts per billion*
RFs	*Risk factors*

List of Abbreviations (Cont...)

Abb.	Full term
RSV	*Respiratory syncytial virus*
SABA	*Short acting beta 2 agonist*
SAMA	*Short-acting muscarinic antagonist*
SCG	*Sodium cromoglycate*
SD	*Standard deviation*
SEC	*Socioeconomic class*
SLIT	*Sublingual immunotherapy*
TB	*Tuberculosis*
TC	*Total cholesterol*
TG	*Triglycerides*
Th1	*T helper 1*
Th2	*T helper 2*
TNF	*Tumor necrosis factor*
TRAP	*Traffic-related air pollution*
TSH	*Thyroid stimulating hormone*
US	*United States*
VLDL	*Very low density lipoprotein*
WHO	*World health organization*

INTRODUCTION

Asthma is the most common chronic respiratory disease affecting children. Globally, about 300 million people have asthma, and current trends suggest that an additional 100 million people may be living with asthma by 2025. The World Health Organization (WHO) estimates about 250 000 deaths from asthma every year, mainly in low and middle-income countries. The fast rate of urbanization has been linked to the increase in the burden of asthma. The International Study of Asthma and Allergies reported that asthma prevalence among children was increasing in Africa and has contributed to the burden of disease through its effects on quality of life. In-patient admissions and purchase of medications account for most of the direct costs on government, while loss of productivity, due to absenteeism from work and school, are responsible for most of the indirect costs ***(Adeloye et al., 2013)***.

In Egypt, several studies have shown a significantly higher prevalence of asthma. For example, prevalence rate of asthma was 7.7% among school children in the Nile delta region ***(Zedan et al., 2009)*** and it was 46.1% among school children in Al Maasara and Al Maadi region ***(Al Dhduh et al., 2015)***, while among 11–15-yr-old schoolchildren in Cairo the overall prevalence of wheezing was 14.7% and of physician-diagnosed asthma was 9.4%***(Georgy et al., 2006)*** and among

school children aged 6-12 years in Assuit district it was 7.2% ***(Hassan et al., 2017).***

Global Initiative for Asthma (GINA) 2011, has defined asthma as a chronic inflammatory disorder of the airways. The chronic airway inflammation is associated with airway hyperresponsiveness that leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing. The chronic inflammatory state in asthma is triggered and maintained by environmental factors. There are many host related factors that add to this inflammation and increase the occurrence of asthma. One such proinflammatory host factor that has gained interest among researchers in recent years is serum cholesterol level. It is well established that hypercholesterolemia is associated with enhanced expression of proinflammatory mechanisms leading to increased levels of proinflammatory cytokines cellular adhesion molecules and inflammation sensitive plasma proteins ***(Ramarju et al., 2013).***

Dyslipidemia, a condition involving elevated serum triglyceride (TG), elevated serum low density lipoprotein cholesterol (LDL-C), and/or low serum high density lipoprotein cholesterol (HDL-C), has become a health problem of growing concern ***(Gowdy et al., 2013).***

A number of pathophysiologic mechanisms could explain the direct association found between childhood asthma and high serum triglycerides, this association is consistent with