PLASMA OSMOLARITY AND BRONCHIAL HYPERREACTIVITY

Thesis

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By

616.23
Sh-H

Shorouk Hassib El-Batrawy
M.B.,B.Ch.

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Supervised by

Prof.Dr. Adel Gomaa Aly
Professor of Chest Diseases
Head of Chest Department
Faculty of Medicine
Ain Shams University

Prof.Dr. Hussein Aly Hussein
Professor of Chest Diseases
Faculty of Medicine
Ain Shams University

And assisted by

Dr.Sherif El- Bouhy
Ass. Prof. of Chest Diseases
Faculty of Medicine
Ain Shams Univeristy

Faculty of Medicine
Ain Shams Univeristy

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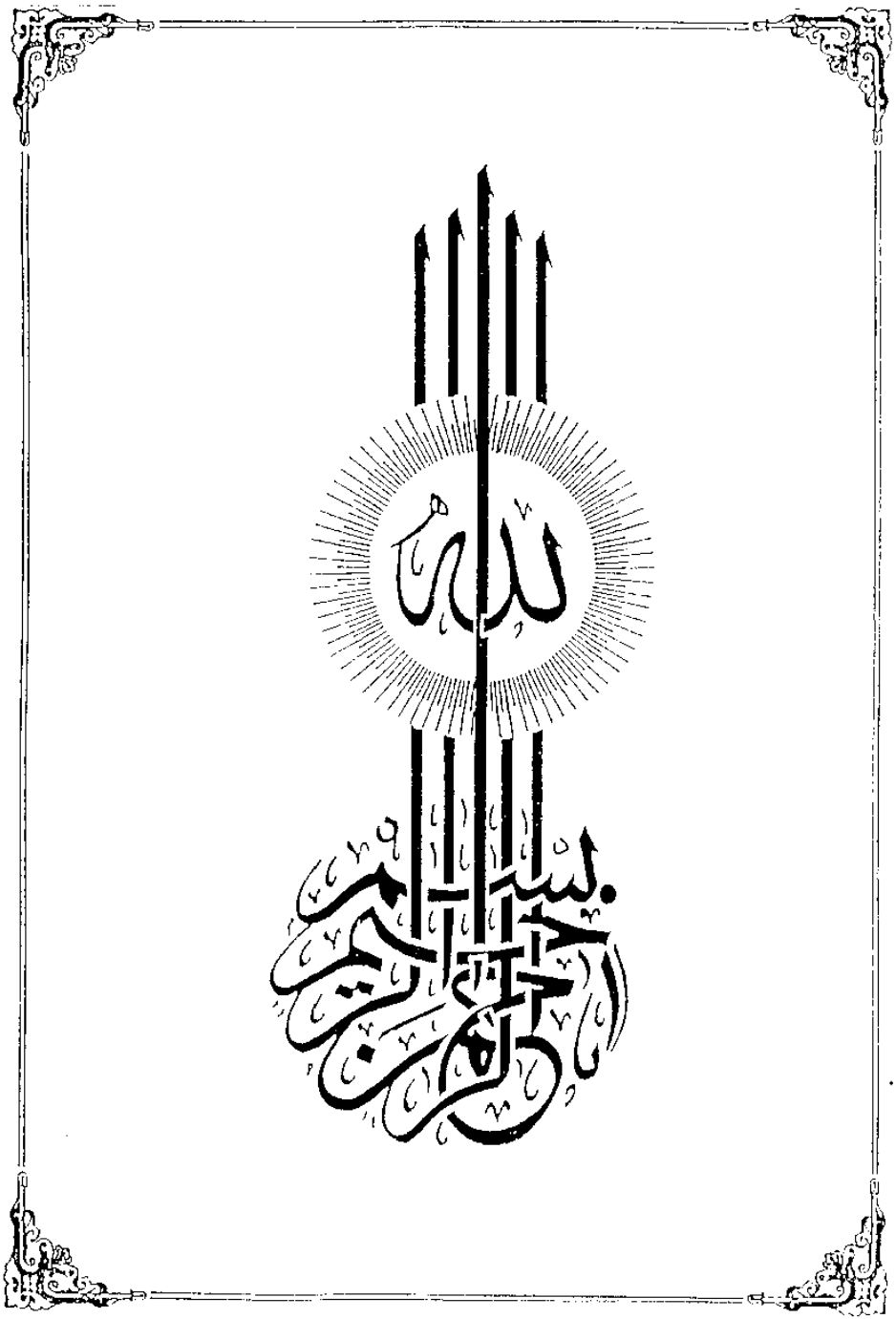

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List of Abbreviations

A.Ch.	Acetyl choline
ACE	Angiotensin converting enzyme
AN	Autonomic neuropathy
BA	Bronchial asthma
BAL	Broncho-alveolar lavage
BHR	Bronchial hyperreactivity
Ca^{2+}	Calcium ion
CAHC	Cold air hyperventlilation challenge
Cl^-	Chloride ion
COPD	Chronic obstructive pulmonary disease
DRS	Dose response slope
DTH	Delayed type hypersensitivity
ECF	Extracellular fluid
EIA	Exercise induced asthma
ELF	Epithelial lining fluid
ET	Endothelins
FEV_1	Forced expiatory volume in one second
FVC	Forced vital capacity
GCSF	Granulocyte colony stimulating factor
GMCSF	Granulocyte-Macrophage colony stimulating factor
IDDM	Insulin dependent diabetes mellitus
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IL	Interleukin
ISH	Isocapnic hyperventilation
K^+	Potassium ion
LAR	Late asthmatic response
Na^+	Sodium ion
Nacl	Sodium chloride
NANC	Non adrenergic non cholinergic
NIDDM	Non insulin dependent diabetes mellitus

NANC	Non adrenergic non cholinergic
NIDDM	Non insulin dependent diabetes mellitus
NS	Non significant
PAF	Platelet activating factor.
PD_{20}	provoking dose causing a 20% fall in FEV_1
PEF25-75	Peak expiratory flow in 25 - 75 secs.
PEFR	Peak expiratory flow rate
PG	Prostaglandin
SCG	Sodium chromoglycate
sGaw	Specific airway conductance
SP	Substance P
TCPO	Transcutaneous blood oxygen pressure
TNF	Tumor necrosis factor
VIP	Vasointestinal peptide

INTRODUCTION
AND
AIM OF THE WORK


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Introduction

Bronchial hyperreactivity (BHR) is the extreme sensitivity of the airways to physical, chemical and pharmacologic stimuli *(Boushey, H. et al. 1980)*

It has a composite pathophysiology and has been studied extensively in terms of the position and shape of dose response curve to methacholine and histamine as well as other non specific bronchoprovocation tests which include inhalation of distilled water, inhalation of cold dry air, hyperventilation and exercise *(Towenly, R. & Hopp, R.1987)*. The second major type of bronchial inhalation testing is testing with allergens and occupational low molecular weight sensitizing chemicals. *(Cockcroft, D. et al. 1987).(1)*

Patients with asthma may have an attack provoked by inhaling aerosols that increase or decrease the osmolarity of the fluid lining the airways such as water and hyperosmolar saline *(Smith, C. et al 1989)*.

Plasma osmolarity can be closely estimated from routine analysis by measurement of serum sodium, serum glucose and serum urea *(Carl, A. & Edward, R. 1994)*. When asthmatics were subjected to salt loading, lung functions deteriorated *(Gomaa, A. et al. 1995)*.

Aim of the work

The aim of this work is to study the presence of any possible relation between increased plasma osmolarity and bronchial hyperresponsiveness in patients with hyperglycemia due to diabetes mellitus and those with increased blood urea due to renal function impairement.


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