

EFFECT OF ACUPUNCTURE ON CHRONIC BRONCHIAL ASTHMA PATIENTS

Thesis
Submitted in Partial Fulfilment
of Master Degree in *Pediatric*

By
Osama Ahmed Dawoud
(M. B., B. Ch)

Supervised by
Prof. Dr. **Karima Ahmed Abdel Khalek**
Professor of Pediatrics
Ain Shams University

Dr. Eman Mahmoud Fouda
Lecturer of Pediatrics
Ain Shams University

Dr. Ahmed Mohamed El-Kahky
*Lecturer of Physical therapy, Institute of Post-Graduate
Childhood Studies (Medical Dept.)*
Ain Shams University

Faculty of Medicine
Ain Shams University

1998



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ .

﴿ سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ . ﴾

(سوره البقره آیه ۳۲)

Acknowledgement

I wish to express my deepest gratitude and appreciation to Prof. Dr. **Karima Ahmed Abdel Khalek**, Prof. of Pediatrics Ain Shams University, for her great help and support in supervising. She did not spare any effort in guiding me towards the best of this thesis.

I would also like to express my sincere gratitude and appreciation to Dr. **Eman Mahmoud Fouoda**, Lecturer of Pediatrics, Ain Shams University, I am greatly indebted for her expert assistance and unlimited support which have honoured this work.

Also, I'm greatly honoured to express my sincer thanks to Dr. **Ahmed Mohamed El-Kahky**, Lecturer of Physical therapy, Institute of Post-Graduate childhood studies (Medical Dept.), Ain Shams University, by whome, I was very much impressed for his sincer guidance, generous attitude, sympathy and great help.

Last but not least, I would like to thank the patients and everybody who shared in this thesis.

*Osama Ahmed
September, 1998*

Contents

	Page
* List of Abbreviation	
* List of Tables	
* List of Figures	
* Introduction	1
* Aim of the Work	3
* Review of Literature	4
* Chapter I: Bronchial Asthma	4
<i>Definition</i>	4
<i>Epidemiology of bronchial Asthma</i>	4
<i>Classification of Asthma</i>	9
<i>Pathogenesis of Asthma</i>	17
<i>Management of Asthma</i>	31
<i>Unconventional complementary)</i>	
<i>Therapies in Asthma.</i>	39
<i>Palmonary function assessment</i>	46
* Chapter II: Acupuncture	55
<i>Mechanism of acupuncture</i>	58
<i>Complications</i>	66
<i>Technique</i>	70
<i>Acupuncture and treatment of diseases</i>	76

* Patients and Methods	78
* Results	87
* Discussion	114
* Summary & Conclusion	125
* Recommendations	129
* References	130
* Appendix	
* Arabic Summary	

LIST OF ABBREVIATIONS

Abbreviation	Meaning
ACTH	Adrenocorticotrophic hormone
B ₂	Beta 2 agonist
BALF	Bronchoalveolar lavage fluid
BIIR	Bronchial hyperresponsiveness
CD4	Cluster of differentiation
EAR	Early asthmatic reaction
EIA	Exercise induced asthma
EPI	Epinephrin
FEF ₂₅₋₇₅	Forced expiratory flow
FEV ₁	Forced expiratory vlume in first second.
FVC	Forced vital capacity
H	Heart
HIT	Homoeopathic immunotherapy
IgE	Immunoglobulin E
IgG4	Immunoglobulin subclass 4
IL4	Interlukein 4
Ki	Kidney
LAR	Late asthmatic reaction
Li	Large intestine
Liv	Liver
LTC4	Leukotriens C4
LTD4	Leukotriens C4
LTE4	Leuktriens E4
LU ₇	Lung 7
MBP	Major basic protein
NEP	Neutral endopeptidase
NKA	Neurokinin A
PaO ₂	Pressure of arterial oxygen.
PaCO ₂	Pressure of arterial carbone dioxide

PAF	Platelet activating factor
PEFR	Peak expiratory flow rate
Ren ₁₇	Renal 17
Si	Small intestine
SP	Substance P
ST	Stomach
TH	Tri hearter
TH2	T helper lymphocyte
UB ₁₃	Urinary bladder 13

LIST OF TABLES

No. of Table	Title	Page No.
1	Clinical differences between atopic and non atopic asthma.	12
2	Scoring of asthmatic children according to post bronchodilatation FEV1	52
3	Characteristic patterns of obstructive and restrictive diseases as measured by spirometry.	53
4	Symptom score	80
5	Daily medication usage score	81
6	Statistical comparison between group I and group II as regards the age of the patients	87
7	Statistical comparison between group I and group II as regards age of onset and duration of bronchial asthma.	88
8	Statistical comparison between group I and group II as regards frequency of attacks of bronchial asthma per month, wheezing or coughing score, medication score and daily activity score before acupuncture.	89
9	Statistical comparison between group I and group II as regards frequency of attacks of bronchial asthma per month, wheezing or coughing score, medication score and daily activity score just after acupuncture course.	90
10	Statistical comparison between group I and group II as regards frequency of attacks of bronchial asthma per month, wheezing or coughing score, medication score and daily activity score at the end of follow up period (6 wks after the end of acupuncture course).	91

11	Statistical comparison between group I and group II as regards FEV ₁ , FVC, FEV ₁ % and PEF _R before acupuncture.	94
12	Statistical comparison between group I and group II as regards FEV ₁ , FVC, FEV ₁ % and PEF _R just after the acupuncture course.	96
13	Statistical comparison between group I and group II as regards FEV ₁ , FVC, FEV ₁ % and PEF _R at the end of follow up period (6 wks after the end of acupuncture course).	98
14	Subjective comparison in both groups before and after 6 weeks of acupuncture	101
15	Subjective comparison in both groups before and at the end of follow up period (6 weeks after the end of acupuncture course).	102
16	Subjective comparison in both groups just after 6 weeks of acupuncture and at the end of follow up period (6 weeks after the end of acupuncture course).	103
17	Statistical comparison between group I and group II as regards spirometric pulmonary functions before and just after acupuncture course (6 w.)	106
18	Statistical comparison between group I and group II as regards spirometric pulmonary functions before and at the end of follow up period (6 wks after the end of acupuncture course).	107
19	Statistical comparison between group I and group II as regards spirometric pulmonary functions just after acupuncture course (6 weeks) and at the end of follow up period (6 weeks after the end of acupuncture course).	108

LIST OF FIGURES

No. of Fig.	Title	Page No.
1	Nocturnal asthma: Potential mechanisms.	15
2	Pathophysiologic consequences of airway obstruction.	18
3	Proposed feedback loop between allergen - induced airway hyperresponsiveness and clinical asthma symptoms	21
4	Inflammatory cells involved in asthma	23
5	Important cell types and their mediator products in pathogenesis of asthma	24
6	Atopic allergens: sites of local responses and possible therapies	25
7	Role of airway inflammatory mediators in pathogenesis of asthma	26
8	Cells and mediators involved in allergic reactions and their perpetuation.	30
9	General approach to the treatment of asthma	32
10	Home management of acute asthma	35
11	Emergency department office management of acute asthma	36
12	Hospital management of acute asthma	37
13	Stepwise approach of asthma management	38
14	Normal Flow-volume loops	48
15	Graphic representation of static and dynamic lung volumes	50

16	Lung channel internal course	72
17	The MedGraphics 1070 series 2E/105 for spirometric pulmonary function testing	85
18	Comparison between group (1) and group (2) as regards frequency of attacks per month (pre, after 6 weeks of acupuncture and 6 weeks of follow up.	92
19	Comparison between group (1) and group (2) as regards wheezing score (pre, after 6 weeks of acupuncture and 6 weeks of follow up	93
20	Comparison between group (1) and group (2) as regards FEV ₁ and FVC before acupuncture.	95
21	Comparison between group (1) and group (2) as regards FEV ₁ and FVC just after the end of acupuncture course.	97
22	Comparison between group (1) and group (2) as regards FEV ₁ and FVC after 6 weeks of follow up period.	99
23	Comparison between group (1) and group (2) as regards PEFr (re, 6 weeks after acupuncture and 6 weeks of follow up.	100
24	Comparison between group (1) and group (2) as regards wheezing score during the study period	104
25	Comparison between group (1) and group (2) as regards frequency of attacks during the study period	105
26	Comparison between group (1) and group (2) as regards FEV ₁ during the study period	109
27	Comparison between group (1) and group (2) as regards PEFr during the study period.	110