بسم الله الرحمن الرحيم

MONA MAGHRABY

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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MONA MAGHRABY

Racial Differences in Food Allergy Phenotype and Health Care Utilization among Egyptian & USA Patients

A Thesis

Submitted for partial fulfilment of M.D. degree
in Internal Medicine

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قالوا
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إلا ما علمتنا إنك أنت
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Ahmed Yehia Elmazaly

List of Contents

List of Abbreviations

Abbr.	Full-term
AA	African American.
AAP	American Academy of Pediatrics.
AD	Atopic Dermatitis.
alpha-gal	Galactose Alpha.
AR	Allergic Rhinitis.
BAT	Basophil Activation Test.
B-reg	B-regulatory.
CCL18	Chemokine Chemotaxis Ligand 18.
CCR6	Chemokine Cognate Receptor 6.
CD	Cluster of Differentiation.
CoFAR	Consortium of Food Allergy Research.
CRD	Component-resolved Diagnostics.
CpG	Cytosine-phosphate-Guanine.
DC	Dendritic Cells.
EAACI	European Academy of Allergy and Clinical Immunology.
ECs	Epithelial Cells.
ED	Emergency Department.
EIA	Enzyme Immunoassay.
EPIT	Epicutaneous Immunotherapy.
FA	Food Allergy.
FDA	Food and Drug Administration.
FPIES	Food Protein Induced Enterocolitis Syndrome.
GM-CSF	Granulocyte Macrophage-Colony Stimulating Factor.
IL	Interleukin.
ILCs	Innate Lymphoid Cells.
ILC2s	Innate Lymphoid Cells type 2.
ILC3s	Innate Lymphoid Cells type 3.
IgE	Immunoglobulin E.

JPGFA ..... : Japanese Pediatric Guideline for Food Allergy.

JSPACI ..... : Japanese Society of Pediatric Allergy and Clinical Immunology.

LEAP ..... : Learning Early about Peanut.

mAb ..... : Monoclonal Antibody.

MHC ..... : Major Histocompatibility.

NAS ..... : National Allergy Strategy.

NIAID ..... : National Institute of Allergy and Infectious Diseases.

OECD ..... : Organization for Economic Co-operation and Development.

OFCs ..... : Oral Food Challenges.

OIT ..... : Oral Immunotherapy.

QOL ..... : Quality Of Life.

RR ..... : Relative Risk.

SD ..... : Standard Deviation.

SES ..... : Socio-economic Status.

SLIT ..... : Sublingual Immunotherapy.

SPT ..... : Skin Prick Test.

STAT4 ..... : Signal transducer and activator of transcription 4.

SU ..... : Sustained Unresponsiveness.

TGF ..... : Tumor Growth Factor.

TH ..... : T- Helper.

TLR ..... : Toll-like Receptor.

T-reg ..... : T-regulatory.

TSLP ..... : Thymic Stromal Lymphopoietin.

UK ..... : United Kingdom.

USA ..... : United States of America.

γδ T cells ..... : Gamma Delta T cells.

List of Tables

List of Figures

Impact of Socio-economic Status on IgE-mediated Food Allergy in Egyptian Children

Rationale: Egyptian children have different socio-economic statuses (SES). We examined differences between two groups of children from high (H) and low (L) SES with food allergy (FA).

Methods: We administered a questionnaire to caregivers of children up to 12 years of age with FA from two groups of 25 seen at allergists' private offices (H-SES) and a public hospital (L-SES).

Results: L-SES and H-SES had similar male predominance, age of weaning, and having only one FA (68% and 64%) (11 (IQR 7–15) and 12 (IQR 10-12) months) (64% and 92%), respectively, and in the symptom being cutaneous (100% and 84%) and gastrointestinal (52% and 48%), being severe (48% and 44%) and in emergency room care (40% and 28%). There were statistically significant differences in L-SES group being older (134.4 ±8.64 months) than H-SES (91.44 ±26.64 months), born vaginally (76% vs 64%) and having milk allergy (60% vs 16%), respectively, and in H-SES group compared to L-SES having egg as the commonest allergen (56% vs 36%), being on dietary elimination (52% vs 12%) and on sublingual immunotherapy (44% vs 36%), in earlier symptom onset, earlier age at diagnosis and higher IgE (18 (IQR 12–24) vs 96 (48–96) months), (36 (IQR 24–48) vs 96 (IQR 48–102) months), (421 (IQR 237–504) vs 214 (IQR 124–319) IU/dl), respectively. No children were prescribed epinephrine auto-injector.

Conclusion: FA presents and is managed differently among Egyptian children based on SES, highlighting disparities and suggesting environmental factors play a role.

Keywords: Children, Egyptian, food allergy, IgE, socio-economic status, milk, egg, epinephrine, emergency room.

Introduction

Allergic disorders are thought to be influenced by two distinct factors that interact at various levels. The first is the genetic composition and the second is the environment.

Because allergic disorders are multifactorial syndromes, a different approach to get to the environmental basis is a comparison of the social status as reflected by the location of health care, public or private clinics. This aspect brings in the environment in the equation because of the differences in the home environments between the patients who seek health care in public and private clinics.

Families caring for children with FA experience significant impairments in psychosocial outcomes, including FA-related quality of life **(FAQoL)**; however, these data come primarily from White, privately insured families, and little is known about psychosocial outcomes in families with low socio-economic class.

Being geographically located in North Africa, the Egyptian population is expected to be ancestrally closer to the African American **(AA)** population than to the Caucasian population of the United States of America **(USA)**.

The Egyptian population also has a clear social distinction between patients who attend the public hospitals and those who attend private practices offices. This would reflect a difference in the home environment, the feeding habits and the diet.