Prevalence of Parasitic infections among eosinophilic children

Thesis
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By

Samy Elawa El Sayed Mohamed
M.B., B.ch.

Supervised by

Professor Dr. Hamed M. Shatla
Professor of Paediatrics
Ain Shams University, Cairo.

Professor Dr. Fathy Mohamed Abdel Ghaffar
Professor of Parasitology
Ain Shams University, Cairo

Faculty of Medicine
Ain Shams University
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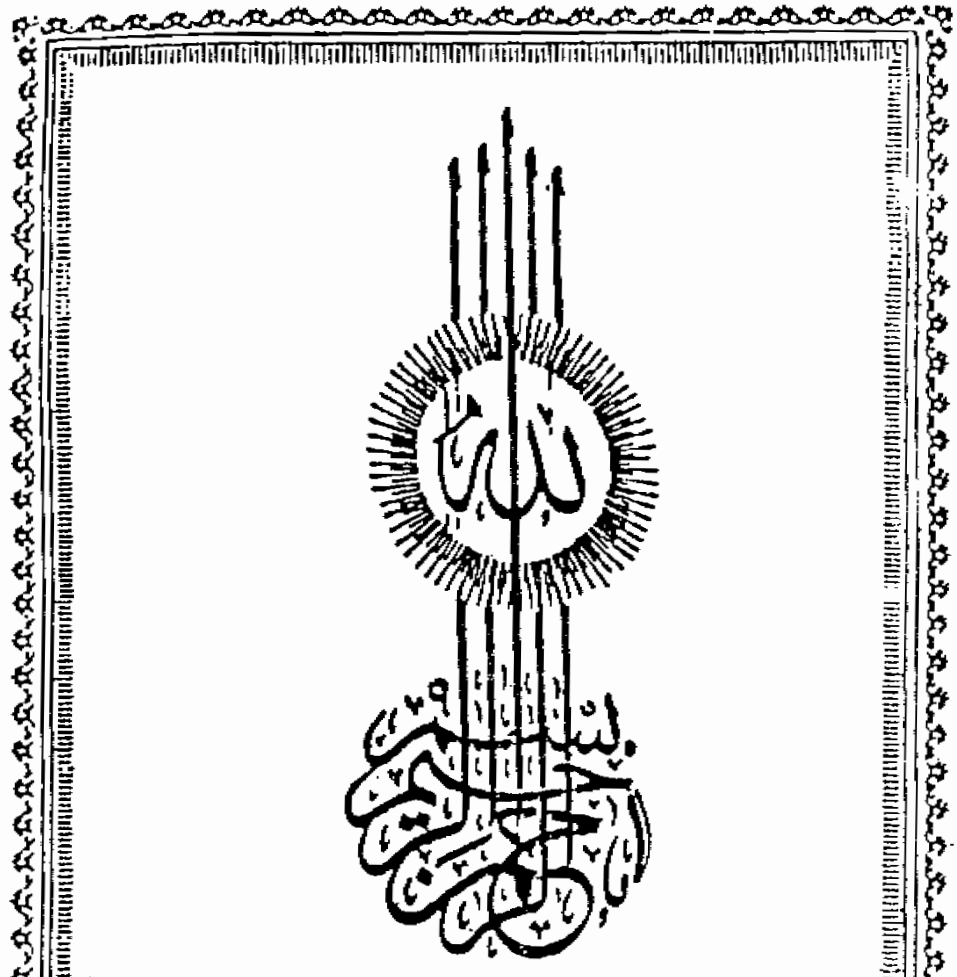

"وَعَلَّمَكَ مَا لَمْ تَكُنْ تَعْلَمُ وَكَانَ فَضْلُ اللَّهِ عَلَيْكَ عَظِيمًا"

صدق الله العظيم

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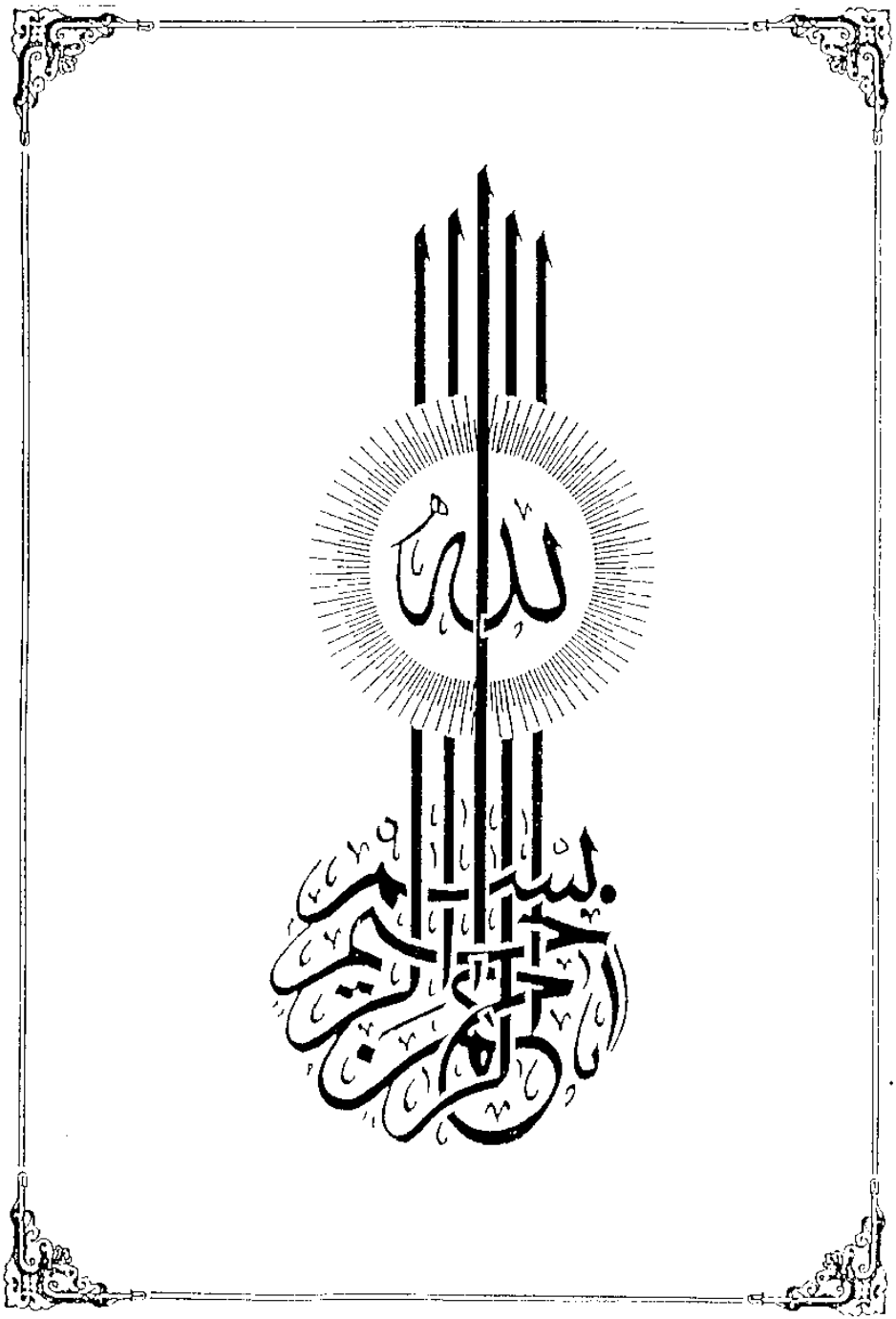

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Abbreviations

CLC	Charcot-Leyden Crystals
CRI	Complement receptor typel.
CR3	Complement receptor type 3.
$C1_q$	A subcomponent of the first component of complement
ECF-A	Eosinophil chemotactic fastor of anaphylaxis.
ECP	Eosinophil cationic protein
EDN	Eosinophil-derived neurotoxin.
EOP	Eosinophil Peroxidase.
$HETE_s$	Hydroxy-eicosatetraenoic acids.
I.H.A.	Indirect haemagglutination.
LT	Leukotriene
LTB_4	Leukotriene B_4
LTC_4	Leukotriene C_4
LTD_4	Leukotriene D_4
MBP	Major basic Protein
PAF	Platelet-activating factor.
SRS-A	Slow reacting substance of anaphylaxis
TNF	Tumour necrosis factor.

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INTRODUCTION

Introduction:

Eosinophilia refers to an increase in the number of eosinophil leucocyte above normal (wintrobe, 1979). Honsinger et al.,(1972) stated that the presence of eosinophilia is an indication of relation to foreign protein that has entered the body or from protein abnormally brocken up inside the body.

In patients from the developed countries, eosinophilia is associated most often with allergic disorders,neoplasms, angio immunoblastic lymphadenopathy or a primary eosinophilic disease(Beeson and Bass, 1977), while in patients from the 3rd world countries, parasites are the usual cause of peripheral eosinophilia (conard, 1971). Diseases caused by parasites are a major cause of morbidity and mortality in infants and children in many parts of the world (Mahmoud and Kaplan, 1987).

In Egypt, these diseases are the major medical problem where they predispose to malnourishment and impairment of physical and mental development of children (Sabbour, 1978).

AIM OF THE WORK

Aim of the Work:

The aim of the present work is to study the prevalence of parasitic infections among eosinophilic children.

REVIEW OF LITERATURE

Morphology and Structure of the eosinophil.

The eosinophil, like the neutrophil and basophil, is a granulocyte, but many features that include the morphology, constituents, products and association with disease states serve to distinguish the eosinophil from the other two polymorphonuclear leucocytes (Cohen and Ottesen, 1983).

The human eosinophil measures 10-15 μ in diameter, which is a similar size to the neutrophil, and generally has a bilobed nucleus (Weller, 1984).

The most characteristic microscopic feature of the eosinophil is a class of large ellipsoidal cytoplasmic granules, which contain an electron dense crystalloid core that is enclosed in a less dense matrix (weller and Goetzl, 1980).

These large granules, by dint of the contained basic proteins, stain with acid dyes, such as eosin, and they are membrane bound (Zucker-Franklin, 1983).

Weller, (1984) stated that, the crystalloid core is composed of the major basic protein (MBP) which is quantitatively predominant among the several cationic proteins that residue within this granule. MBP has a molecular weight of 9200-11000 and contains 10-11 arginine residues and 6 half-cystine residues per molecule. It has an iso electric point of more than 10. Unlike cationic proteins of the neutrophil, MBP has no significant antibacterial activity.

According to Kay, (1979), MBP accounts for about half the granule protein content.

Gleich,(1977) examined the functions of the eosinophil MBP. He found that MBP is unable to increase vascular permeability, it does not possess antihistaminic activity nor is it a bradykinin antagonist. It precipitates DNA, neutralises heparin activity and activates papain.

Monomor MBP is cytotoxic to parasites (Butterworth, et al., 1979b; Wasson and Gleich, 1979).

Eosinophil peroxidase is another basic protein, located in the matrix of the granule that surrounds the crystalloid Core. Another basic granular constituent is the eosinophil cationic protein (ECP) which has a molecular weight of about 21,000. A fourth distinct cationic protein is the eosinophil-derived neurotoxin (EDN) (weller, 1984).

Solifman et. al., (1986) stated that both EDN and ECP exhibit neurotoxic properties. ECP is a potent helmintho toxic whereas EDN, although possessing helmintho toxic activity, is less active than ECP.

Gleich et al., (1986) found that both EDN and ECP showed amino acid sequence homology to human pancreatic ribonuclease (RNase).