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شبكة المعلومات الحامعية

بسم الله الرحمن الرحيم



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شبكة العلومات الحامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسو

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سامية محمد مصطفى

شبكة المعلومات الحامعية



بالرسالة صفحات لم ترد بالأصل



ADVANCED GLYCATED ENDPRODUCTS AND ANTIOXIDANT ENZYMES ACTIVITY IN SCHISTOSOMIASIS

Thesis

Submitted for partial fulfilment of the M.D. degree in the Medical Biochemistry

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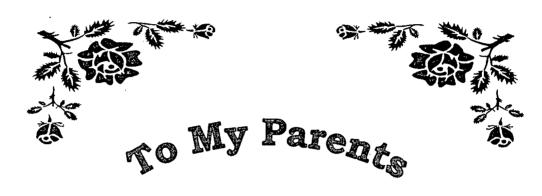
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To My Husband &



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CONTENTS

Introduction	1
Review of literature	2
Aim of the work	74
Materials and Methods	75
Results	109
Discussion	138
Summary & Conclusion	152
References	157
Arabic Summary	

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INTRODUCTION



INTRODUCTION

Schistosomiasis has been considered a great socioeconomic problem in Egypt (1). The brunt of this parasitic disease falls on the liver which is the main organ of intermediary metabolism(2). Although hepatocellular derangement is minimal, many metabolic changes have been frequently encountered in patients with schistosomal hepatic fibrosis (SHF)(3).

Abnormal carbohydrate and lipid metabolism are among those metabolic disorders. Glucose intolerance, hyperinsulinemia and dyslipidemia have been found the common sequlae of schistosomal hepatic fibrosis⁽⁴⁾.

Fresh insight into the development of diabetic macroangiopathy and microangiopathy have emerged due to demonstration of excessive nonenzymatic glucosylation of proteins in hyperglycemic patients⁽⁵⁾.

Available evidence suggests that collagen, the predominant protein of the body is the major target for attachement of glucose by means of stable ketoamine linkage involving amino acid groups of lysine and hydroxy lysine residues(6,7). Also, it has been focused recently on the role of free radicals in the development of diabetic complications(8).

REVIEW OF LITERATURE



ADVANCED GLYCATED ENDPRODUCTS

Advanced glycated endproducts (AGE) are derivatives of nonenzymatic, post-translational and modification reactions between sugars and proteins or lipids (9,10,11,12), and together with AGE specific receptors are involved in numerous pathogenic processes associated with aging (13,14,15) and diabetes (5,6,15, 16,17,18,19,20).

The identification of glucosyl derivatives of a variety of proteins including hemoglobin (21), albumin (22,23), collagen (24), erythrocyte membrane proteins (23) and lens crystallins (25) has established that nonenzymatic glucosylation is a common post-translational modification of proteins in vivo. Prolonged elevation of blood glucose in diabetes is known to cause an increase in levels of nonenzymatically glycosylated hemoglobin, its concentration correlates well with fasting and mean and highest daily glucose levels (26,27) and is useful as an index of diabetes control (26,28).

It has been hypothesized that nonenzymatic glucosylations of body proteins, occurring at enhanced rates during hyperglycemia may contribute to the progressive chronic complications of diabetes (29,30). Glycosylated hemoglobin has an increased oxygen affinity and decreased sensitivity to 2-3 diphospho- glycerate (31,32). Glycosylated crystallins show both a decreased solubility and enhanced tendency to aggregate compared with the native forms (25).

In-vitro and in-vivo studies showed that glycosylated albumin is less soluble, catabolized faster, accumulated more rapidly by the liver