THE EFFECT OF EXPERIMENTALLY INDUCED DIABETES MELLITUS ON THE NEUROMUSCULAR TISSUES OF ALBINO RAT

Thesis

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by

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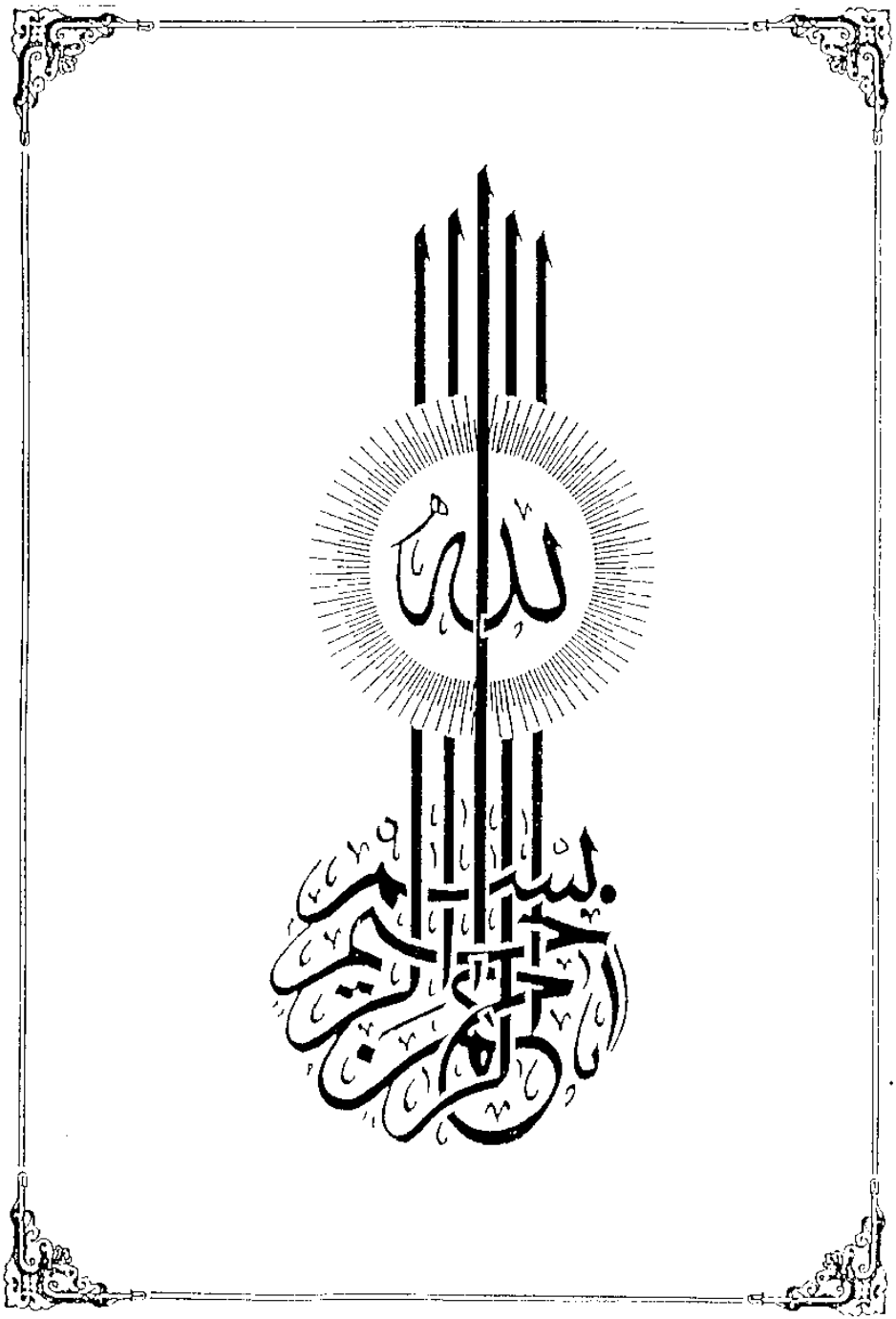

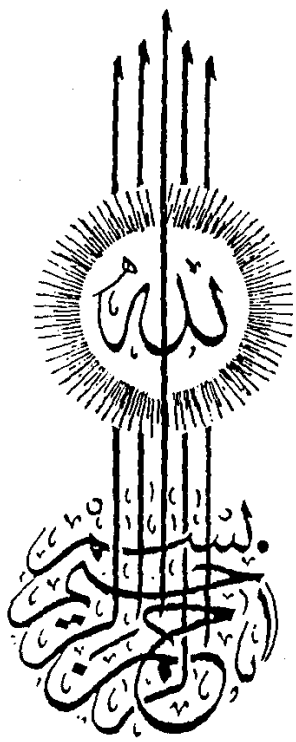

« علم الانسان ما لم يعلم »

صدق الله العظيم

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CONTENTS

Introduction

INTRODUCTION
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AIM OF THE WORK

Diabetes mellitus is one of the commonest causes of disabling polyneuropathy and characterised by dysmetabolic events leading in the chronic state, to functional changes in the form of reduction in nerve conduction velocity as well as structural derangement of neuromuscular tissues ***(Brown and Asbury 1984).*** Neuropathy represents one of the most frequent complications of insulin-dependent diabetes and non-insulin-dependent diabetes mellitus ***(Caccia, Bevilacqua, Dzuannie, Salvaggio, Mangoni and Norbiato 1993).***

(Miglietta, 1973), described a wide assortment of biochemical aberration in skeletal muscle from diabetic animals. ***Grossie (1982)*** reported that neuropathy might be a critical factor in diabetic muscle weakness, he assumed that changes in muscle function would follow neuropathy due to interruption of neuromuscular transmission.

Gillon, King, and Thomas (1986) reported that persistent hyperglycaemia can be induced in rats by injection of alloxan and these animals are useful models to study the effect of hyperglycaemia on nerve metabolism. The underlying mechanism causing abnormality of neuronal cell biology which is reponsible for diabetic polyneuropathy is not known ***(Greene, Lattimer and Sima 1987).***

The majority of recent studies involved the physiological and biochemical changes ocurring in peripheral nerves in diabetic neuropathy ***(Caccia et al., 1993)***. Therefore, the aim of the present work was focussed on studying the structural changes which occurred in the gastrocnemius muscle fibres, sciatic nerve and its terminal intramuscular branches in the gastrocnemius muscle, after the induction of hyperglycaemic state in adult male albino rat using a single alloxan injection.

Review Of Literature