بسم الله الرحمن الرحيم

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سورة المؤمنون

THYROID FUNCTION TESTS IN THE HIGH - RISK NEWBORN

A THESIS

Submitted For the Partial Fulfillment

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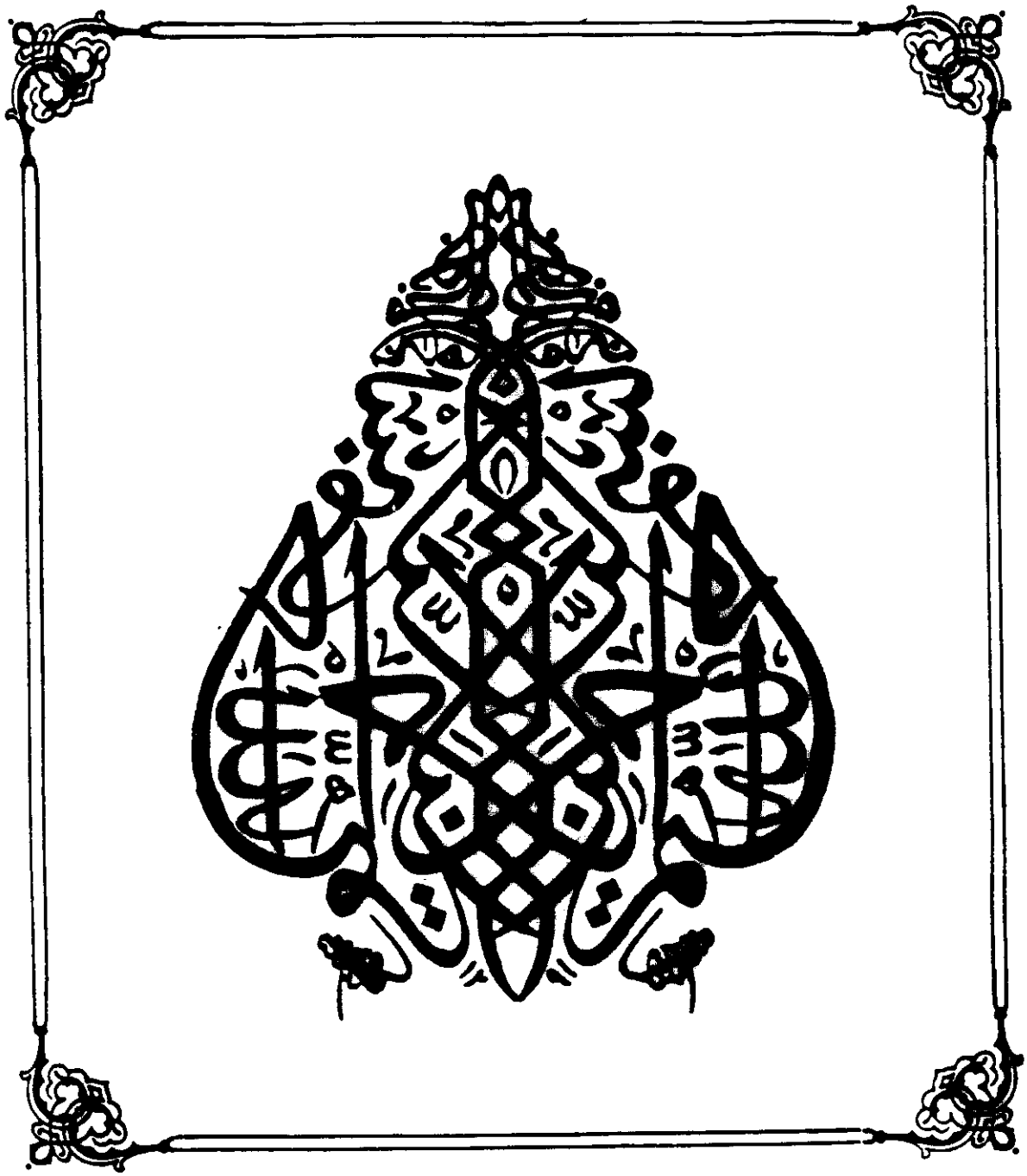

To my husband,
Dr. Mohammed Matar

and

My children,
Mohammed, Amr and Doha
who were very considerate
and supportive.

To my father,
Mr. Fathi Hamdi
who has been extremely
helpful and supportive
althrough
I convey my thanks
and deep gratitude

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ABBREVIATIONS

LIST OF ABBREVATIONS

AFD : Appropriate-for-date.

ELBW : Extremely low birth weight.

F.T. : Fullterm

FT_4 : Free thyroxine.

FTI(FT_4I): Free thyroxine index.

G.A. : Gestational age.

LSCS : Lower segment caesarean section

P.T. : Preterm

RD : Respiratory distress.

RDS : Respiratory distress syndrome.

RIA : Radioimmunoassay.

rT_3 : Reverse tri-iodothyronine.

SFD : Small-for-date.

SVD : Spontaneous vaginal delivery.

t : T-test

T_3 : Tri-iodothyronine.

T_3UR : T_3 uptake ratio.

T_4 : Thyroxine

TBG : Thyroxine-binding globulin.

Tg : Thyroglobulin.

TRH : Thyrotropin-releasing hormone.

TSH : Thyrotropin

VE : Vacuum extraction

VLBW : Very low birth weight.

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ADULT HORMONE VALUES

Thyroxine (T_4)	65_150 nmol/L
Free thyroxine (FT_4)	10_21 pmol/L
Thyroid Stimulating Hormone (TSH)	up to 10 uIu/L
Triiodothyronine (T_3)	1.2_3.4 nmol/L
Reverse triiodothyronine (rT_3)	0.14_0.54 nmol/L
Thyroxine Binding Globulin (TBG)	12_32 mg/L
	(12_32 ug/ml)
Triiodothyronine Uptake Ratio (T_3UR)	25.5_34.4%
Free Thyroxine Index (FT_4I)	16.7_51.6

INTRODUCTION

INTRODUCTION

During fetal life the central nervous system and the neuroendocrine transducer systems are probably not of vital importance to fetal survival or growth; the maternal-placental unit provides a constant supply of growth and energy substrate and maintains respiratory and excretory activities. The capacity of the newborn to survive the stresses of parturition and to function independently in the extra-uterine environment is impressive and is due in no small measure to the functional state of his limbic system or "visceral brain" inducing its hypothalamic-endocrine-motor effector pathways. Present information would suggest that most of these pathways are functional near term and perhaps by midgestation. The neuroendocrine mechanisms for stimulating the secretion of catecholamines and thyroid hormones, seem to be intact and smoothly operative at birth *(Fisher, 1976)*.

The recent implementation of screening programs for the detection of congenital hypothyroidism has focused attention on the unique thyroid physiology and pathophysiology of the newborn. A high prevalence of both transient and permanent disorders of thyroid function has been observed.

Thyroid function is in a state of flux during the perinatal period. Thyroid hormones even though not essential for