Value Of Universal Versus Targeted Screening For Hypothyroidism Among Egyptian Pregnant Ladies

Thesis
Submitted For Partial Fulfillment Of Master Degree In Internal Medicine

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2012

قيمة البحث العام أو الكشف المستهدف لمرض قصور الغدة الدرقية بين السيدات المصريات الحوامل

رسالة مقدمة من

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بسم الله الرحمن الرحيم

قَالوا سُبْحَانكَ لا
عِلمَ لنا إلاّ مَا
عَلّمْتنا إنّكَ أنتَ
العَلِيمُ الحَكِيمُ

صدق الله العظيم

سورة البقرة- أية
(٣٢)

Acknowledgment

First of all, I would like to thank ***Allah*** *who granted me and gave me the power to complete this work.*

Words fail to express my deepest gratitude and appreciation to ***Prof. Dr. Hussein Abd Elhay Alorabi****, Professor of Internal Medicine and Endocrinology, Faculty of Medicine, Ain Shams University, for his great guidance and powerful support being like a father for me to perform this work.*

My deepest and supreme thanks go to ***Dr. Iman Zaki Ahmed****, Ass. Professor of Internal Medicine and Endocrinology, Faculty of Medicine, Ain Shams University, for her valuable and helpful support and for her kind co-operation.*

Special thanks to ***Dr. Yara Mohammed Eid****, Ass. Professor of Internal Medicine and Endocrinology, Faculty of Medicine, Ain Shams University, for her trustful help, advice and wise supervision throughout the whole work, her generous participation and kind cooperation in this work is greatly appreciated.*

Also, I greatly appreciate the efforts of ***Dr. Magdi Abbas Abd Elaziz****, Ass. Professor of clinical biochemistry, Faculty of Medicine, Ain Shams University.*

Hani Refat

*I would like to dedicate this thesis to the soul of my **Mother** and to my **Father** and **Sisters**; to them I will never find adequate words to express my gratitude.*

*Also to my **Wife** for dealing so patiently, tactfully during this work.*

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List of Abbreviations

AITD	Autoimmune thyroid disease
ATA	American Thyroid Association
BMI	Body mass index
BMR	Basic metabolic rate
D1	Type I deiodinase
D2	Type II deiodinase
D3	Type III deiodinase
DIT	Diiodotyrosine
FaSTER	First and Second Trimester Evaluation of Risk
FT3	Free triiodothyronine (Free T3)
FT4	Free thyroxine (Free T4)
FT4I	Free thyroxine index
HCG	Human chorionic gonadotropin
HIPH	High Institute of Public Health
HPT axis	Hypothalamo-Pituitary-Thyroid Axis
I	Iodine
ICCIDD	International Council for the Control of Iodine Deficiency Disorders
IDD	Iodine deficiency disorders
IOM	Institute of Medicine
IQ	Intelligence quotient
IVF	In vitro fertilization
LGA	Large for gestational age
LT4	Levothyroxine
ME &EMR	Middle East and Eastern Mediterranean Region
MIT	Monoiodotyrosine
NHANES	National Health and Nutrition Examination Survey
NIS	Sodium-iodide symporter
PII	Plasma inorganic iodide

PPT	Postpartum thyroiditis
RAIU	Radioactive iodine uptake
T3	Triiodothyronine
T4	Thyroxine
TBG	Thyroxine binding globulin
TG	Thyroglobulin
TG-Ab	Thyroglobulin antibody
Th1	T-helper type1
Th2	T-helper type2
TPO	Thyroid peroxidase
TPO-Ab	Thyroid peroxidase-antibody
Treg	Regulatory T cells
TREs	Thyroid hormone- responsive elements
TRH	Thyrotropin-releasing hormone
TRs	Thyroid hormone receptors
TSH	Thyroid-stimulating hormone, Thyrotropin
UIC	Urinary iodine concentration
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organization

Introduction

During pregnancy, proper maternal thyroid function is important for both the mother and child ***(LaFranchi et al., 2005).*** This is especially true during the first trimester, when the developing fetus is completely dependent on the mother for thyroid hormones that are critical for optimal development ***(De Escobar et al., 2004).***

Developments in the understanding of thyroid physiology and immunology in pregnancy as well as improvements in thyroid function testing have highlighted the importance of recognizing and providing appropriate therapy to women with gestational thyroid disorders ***(Lazarus et al., 2012).***

Maternal thyroid dysfunction during pregnancy has been shown to be associated with a number of adverse outcomes. For example, elevated maternal thyroid-stimulating hormone (TSH) has been associated with an increased risk of pre-term birth, placental abruption, fetal death and impaired neurological development in the child ***(Casey et al., 2006).*** Similarly, the presence of antibodies to thyroid peroxidase (TPO-Ab) has been associated with increased risk of

miscarriage, pre-term birth, and maternal post partum thyroid disease ***(Stagnaro-Green and Glinoer, 2004)*.**

These findings have triggered a debate whether all pregnant women should be screened for hypothyroidism. The recent consensus guidelines from an expert panel sponsored by the American Thyroid Association, the American Association of clinical Endocrinologists and the Endocrine society did not advocate universal screening of thyroid function during pregnancy, but recommend "aggressive case finding" in high-risk pregnant women, who have a family or personal history of thyroid disorders, a personal history of type 1 diabetes or other autoimmune disorders, or clinical features suggestive of a thyroid disorder***(Brent, 2007).***

However, testing only the high-risk pregnant women, as the consensus guidelines recommend, would miss about one-third of women with hypothyroidism and subclinical hypothyroidism .Therefore, with the growing evidence for an association between maternal subclinical hypothyroidism and adverse pregnancy outcomes but lack of intervention trials showing beneficial effect of thyroxin in preventing these adverse outcomes, the

controversy between "targeted high-risk case" findings and universal screening continues ***(Vaidya et al, 2007)***.

When the potential adverse outcomes are so significant and the tools to diagnose and intervene are easily accessible, however leaving maternal thyroid disease undiagnosed, even in one third of pregnant women, is no longer acceptable ***(Brent, 2007)*.**

Aim Of The Work

Is to determine:

- The prevalence of thyroid dysfunction among pregnant Egyptian ladies.
- The efficacy of universal screening versus targeted high-risk screening among pregnant Egyptian ladies.