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بسم الله الرحمن الرحيم

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التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

بعض الوثائق الأصلية تالفة

بالرسالة صفحات لم ترد بالأصل

HEART RATE VARIABILITY IN OBESITY

Thesis
Submitted in partial fulfillment of
Master Degree in internal medicine

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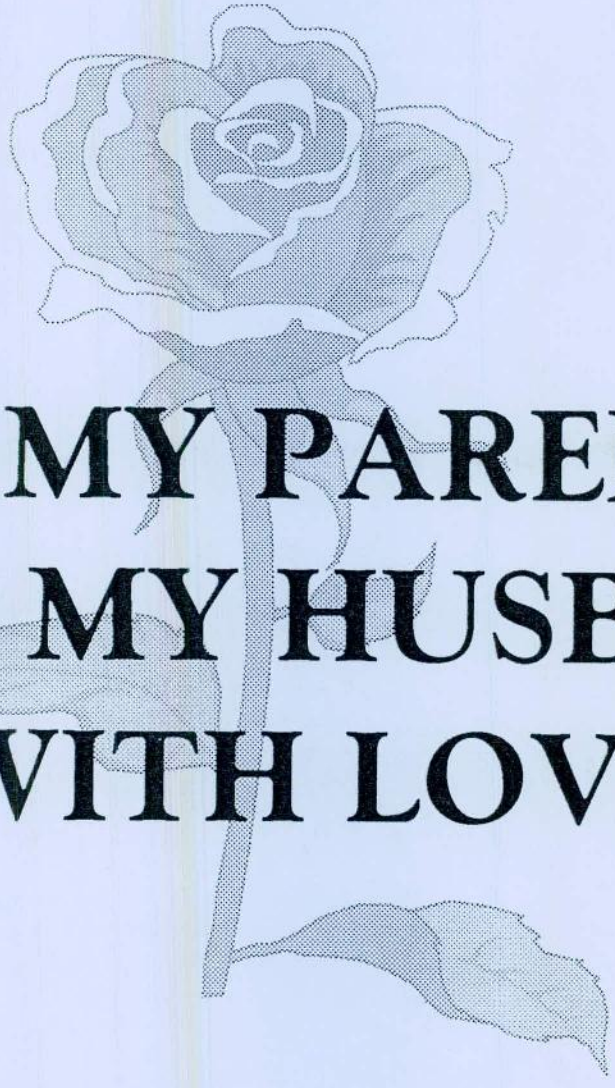
بسم الله الرحمن الرحيم

"وقالوا الحمد لله الذي
هدانا لهذا وما كنا لنهتدي
لولا أن هدانا الله"

صدق الله العظيم

سورة الأعراف (٤٣)



TO MY PARENTS
AND MY HUSBAND
WITH LOVE

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INTRODUCTION AND AIM OF THE WORK

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Obesity in humans has been associated with altered autonomic nervous system activity *(Gao et al.,1996).* Obese persons suffer from an increased mortality risk due to increased cardiovascular disorders related to either continuously lowered parasympathetic or altered sympathetic activation *(Laederach-Hofman et al.,2000).*

There is a well-recognized relationship between autonomic nervous system function and body habitus, although few studies have addressed the role of the parasympathetic nervous system. A decrease in parasympathetic nervous-system-mediated heart rate variability in obesity may in part explain the mortality and morbidity that are associated with the obese state. *(Freeman et al., 1995)*

Low heart rate (HR) variability is a risk factor for cardiac mortality in various patient populations, *(Huikuri et al .,1996).* Heart rate variability provides non-invasive information about cardiac parasympathetic activity (PSA) *(Guten et al .,2000).*

Heart rate variability has attracted attention as an index of the effects of the autonomic nerve system on the heart rhythm. Its low in patients at risk for sudden death *(Nakanishi and Yoshimura 1995)* .

Also its impaired in chronic coronary artery disease (CAD), but the mechanism is not fully resolved *(Kupari et al .,1993).*

The aim of this work is to study the heart rate variability as an index for autonomic dysfunction in obesity and also the relation between obesity and left ventricular mass.

REVIEW OF LITERATURE

AUTONOMIC NERVOUS SYSTEM (ANS)

Anatomical considerations of ANS

Motor components of nervous system fall into two categories *somatic motor system* (or voluntary motor system) and *autonomic nervous system* (or visceral motor system) that carry motor innervation to visceral organs, glands and cardiovascular system ***(Burt.,1995).***

Divisions of autonomic nervous system

There are two anatomical and neurochemical divisions in autonomic nervous system, sympathetic and parasympathetic divisions ***(Chusid., 1983).***

Sympathetic Division

Preganglionic neurons: their cell bodies lie in intermediolateral cell column of the spinal cord, which are usually extends from T I to L3 , axons from these neurons exit From spinal cord in ventral roots with somatic efferent neurons. These preganglionic fibers then leave the spinal nerve, forming the white communicating ramus which enter the paravertebral sympathetic chain. They either synapse in the sympathetic chain or bypass the chain to form splanchnic nerve ***(Burt.,1995).***

Sympathetic Ganglia

There are two groups of sympathetic ganglia.

Paravertebral Ganglia

Initially, there are a single pair of ganglia for each spinal segment , then