

## EVALUATION OF VISFATIN HORMONE LEVEL IN BASRAH OBESE WOMEN

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### Abstract

**Background:** Visfatin is an adipokine secreted mainly by visceral adipose tissue and has been linked to obesity. Visfatin has insulin mimetic properties. Visfatin also play an important role in the development of several chronic diseases and inflammation.

**Aim of the study:** To evaluate serum visfatin concentrations in Basrah women of different body weights to determine the relationships with obesity and diabetes mellites in women in Basrah city.

**Methodology:** In this study, 60 women of different body weights were chosen between October and February, from Basrah University staff and students. They were divided into two groups according to their body mass index (BMI). Anthropometric measurements were recorded for all participants. Blood samples were collected to assay the biochemical parameters, including the levels of visfatin, insulin, glucose and lipid profile.

**Results:** Obese women shows significantly higher visfatin level than lean women. Furthermore, obese women showed significant increase of total cholesterol (T.C), triglyceride (T.G) and low-density lipoprotein-cholesterol (LDL-C) than lean women. However, obese women had significantly lower high-density lipoprotein-cholesterol (HDL-C) than lean women. Whereas, no significant differences of glucose and insulin levels between two group.

**Conclusions:** The results of this study revealed that visfatin levels were increased in obese women. This suggests that visfatin levels strongly associated with obesity.

**Key words** Visfatin, Obesity, Adipose tissue, Adipokines

### 1. Introduction

Obesity is chronic medical condition characterized by excessive fat accumulation in body (Blüher,2020). It is one of the most important factors that lead to many metabolic complications include type 2 diabetes, insulin resistance and cardiovascular disease (Barazzoni et al.,2018).

The spread of obesity globally has risen significantly among developing and, more recently, countries with medium and low income (Mancuso and Bouchard,2019). The World Health Organization (WHO) reports that in 2016, about 2 billion people were overweight, with 650 million meeting the obesity criterion (Jiménez et al.,2020). In the United States, the Middle East and Europe, in particular, the highest level of obesity is found and the lowest in East Asia and Sub-Saharan Africa (Balistreri et al.,2010).

Obesity is measured by using Body Mass Index (BMI) that determined by dividing the weight of the person in kilograms by their square height in meters, therefore, individuals can be classified into three categories, normal (BMI= 18-24.9 kg / m<sup>2</sup>), overweight (BMI= 25-29.9 kg / m<sup>2</sup>) and obese (BMI= 30 kg / m<sup>2</sup>) (Berthoud and Klein,2017).

There are many reasons that contributes to the evolution of obesity such as genetic variation, individual and environmental factors. Moreover, the prevalence of obesity is often influenced by racial disparities such as sex, age and race (Hales et al.,2020; Alqarni,2016).

The main source of fatty acids (FFA) in the fasting state is adipose tissue which is used for energy use and heat production (Balistreri et al.,2010). Adipose tissue also recognized as large endocrine and paracrine organ in human body which is secretes hundreds of bioactive molecules called adipokines (Zhang and Sairam,2014). These molecules are proteins secreted mainly by adipocytes and have role in several function in the body including energy metabolism, glucose homeostasis, inflammation, insulin resistance, immunity, appetite and satiety (Unamuno et al.,2018).

Visfatin hormone, the subject of our current research, is one of the important adipokines secreted from adipose tissue. Visfatin was first described by Fokohara in 2005, this hormone is predominantly found in visceral fat of obese mice and humans (Makhoumi et al.,2014). Visfatin has insulin mimic properties, its play an important role in the homeostasis of energy, glucose metabolism and inflammation by regulation the production of some inflammatory cytokines including tumor necrosis