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Apelin and lipid profile in hypertensive patients a correlation data

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Abstract
High blood pressure is directly related to the rise in non-HDL-c harmful fats in the body, as it narrows the arteries and thus increases blood pressure. However, blood pressure decreases significantly with high UHDL-c, so it is considered good fat. Volunteers have divided into two groups the control group included healthy people and the patients' group involved hypertension. Lipid profile and Apelin were measured for both groups, and apelin was measured using an ELISA kit. As a result, apelin was decreased significantly in hypertension patients'. Also, lipid parameters like TG, LDL-c, and non-HDL-c were elevated. Apelin level in the control group was higher than in the patients' group, which was a good indicator of normal blood pressure. A low level of apelin in the patients' group was a bad sign for hypertension, a decrease in apelin concentration in connection with an increase in non-HDL-c levels. So, this maybe increases the risk of hypertension and dyslipidaemia.

Keywords: Lipid profile, apelin, hypertension

Introduction
Hypertension affects millions of patients and is recognised as a risk factor for cardiovascular events and cardiovascular mortality. Hypertension results from a complex interaction between environmental factors, genetic influences, unhealthy lifestyle and abnormalities in the control mechanisms of the cardiovascular system. Consequently, identifying a specific cause for this condition is impossible in many patients, which explains the use of the terms essential or primary hypertension [1].

Many theories offer to explain the hypertension phenomenon. The incidence of blood pressure (BP) increases anomalies in salt and water levels in a person handled by the kidneys. Especially through the intrarenal route of the renin-angiotensin-aldosterone system in the body. Also, deregulation of neuronal autonomic modulation of the circulatory system. These mechanisms are not mutually exclusive, and they could all have a role in the rise in blood pressure seen in many people with essential hypertension. Endothelial dysfunction and inflammation linked to heart disease in recent studies of the emergence of a hypertensive state [2].

Cardiovascular diseases (CVDs) are the leading cause of death worldwide, accounting for nearly 4 million fatalities (45 percent of all deaths) in Europe each year [1]. Important risk considerations are lipoprotein changes are responsible for around half of all CVDs. Include high levels of total cholesterol (TC), low levels of low-density lipoprotein cholesterol (LDL-c) and low levels of high-density lipoprotein cholesterol (HDL-c) concentrations. LDL-cholesterol, intermediate-density lipoproteins, VLDLs, and non-HDL-c cholesterol show the total cholesterol carried by all potentially atherogenic particles and lipoprotein remnants. European guidelines propose lowering TC and LDL-c levels as primary targets in treatment approaches because it includes remnant cholesterol and is unaffected by triglyceride fluctuation. Non-HDL-c considers a better measure [3].

Apelin is an adipokine discovered by Tatemoto *et al.* in 1998. Apelin is expressed and secreted by both mouse and human adipocytes. In adipocytes, insulin can upregulate apelin expression. The expression of apelin in adipose tissue of humans swiftly cleaved from circulation with a half-life of <5 minutes. Furthermore, apelin and its receptor, the orphan G protein-coupled receptor (OGPR) and APJ receptor are expressed in pancreatic islet cells [4]. Apelin has a regulator effect of glucose stimulation on insulin production [5].