

# The Role of Irisin and Some Immunological And Biochemical Parameters in Hypertensive Patients in Salah Al-Din Governorate

Houda Ali Mahmoud, A.P Mohanad Hasan Mahmood AL-Izzi, PHD

## ABSTRACT

**Study Design:** Cross sectional

**Background:** High blood pressure is the largest single contributor to the global burden of disease and is increasing annually, affecting an estimated 1.39 billion people worldwide and causing 10.4 million premature deaths annually. It usually has no symptoms, but can cause serious problems such as: Stroke, heart failure, and studies must be conducted on how to prevent and control high blood pressure.

**Objective:** This study aims to evaluate the level of the hormone irisin in patients with high blood pressure and its relationship to interleukin 2, interleukin 1 beta, and interleukin 17, and also to study the level of lipids in patients with high blood pressure and evaluate the level of risk of their blood pressure.

**Methods:** Research methods: This study was conducted in Saladin Governorate, the city of Tikrit in Iraq, where 90 samples were collected from males and females, blood was drawn from them in the morning while they were fasting, and they were divided into two groups. The first group was (50) male and female patients suffering from high blood pressure, which is essentially pathological and not hereditary. They were newly diagnosed as a result of their unhealthy lifestyle. For example, they eat a large amount of fat that has taken away from their weight, and they do not suffer from other chronic diseases. They exercise infrequently and have never had surgery. The second group is the control group (40 male and female individuals). Five milliliters of blood was drawn intravenously from hypertensive patients and healthy controls, and samples were collected from Salah al-Din General Hospital and some external medical laboratories. The ages of the patients ranged between (20-50) years. Interleukin 2 and interleukin 1 beta were measured and their relationship with high blood pressure was measured using measuring tools. A ready-made kit from the American company SUNLON based on ELISA technology using the Huma Reader device

**Result:** The results of immunological parameters showed a significant increase in the levels of interleukins (IL-17, IL-2, IL-1 beta), which was statistically significant ( $P \leq 0.01$ ) among individuals suffering from high blood pressure compared to the control group. It also indicates a higher level of the hormone irisin compared to people. In healthy subjects, lipid levels (cholesterol, triglycerides, LDL, and VLDL) were elevated and statistically significant ( $P \leq 0.01$ ) among individuals with hypertension compared to the control group. At the same time, there was a statistically significant decrease in HDL ( $P \leq 0.01$ ) among individuals with hypertension who suffer from high blood pressure compared with the control group.

**Conclusion:** : This study aimed to provide important results regarding the levels of the hormone irisin in the blood of hypertensive patients and its association with interleukins (1 beta, 2, 17) and some lipid biochemistry in hypertensive patients. Explain whether there is a relationship between them in terms of the immune response in patients with high blood pressure.

**Keywords:** high blood pressure patients in Salah al-Din Governorate, interleukin-2, interleukin-1 beta, interleukin-17, the hormone irisin, cholesterol, triglycerides, HDL, LDL, VLDL

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\* Department of Biology  
College of Science, Tikrit University Iraq.  
E-mail: Houdaali1997@gmail.com

\*\* Department of Biology  
College of Science, Tikrit University Iraq.