



Serum High Sensitivity C-Reactive Protein and Ferritin and Type 2 Diabetes Microvascular Complications

Laily Najafi*

Department of Endocrinology and Metabolism, Iran University of Medical Sciences, Tehran, Iran

INTRODUCTION

Type 2 diabetes is a deep-rooted illness that shields your body from utilizing insulin the manner in which it should. Individuals with type 2 diabetes are said to have insulin obstruction [1].

Individuals who are moderately aged or more established are well on the way to get this sort of diabetes, so it used to be called grown-up beginning diabetes. However, type 2 diabetes additionally influences children and youngsters, for the most part in view of youth heftiness.

It's the most widely recognized sort of diabetes. There are around 29 million individuals in the US with type 2. Another 84 million have prediabetes, which means their glucose (or blood glucose) is high however not sufficiently high to be diabetes yet [2].

DESCRIPTION

Signs and symptoms of type 2 diabetes

The indications of type 2 diabetes can be mellow to such an extent that you don't see them. Around 8 million individuals who have it don't have any acquaintance with it. Manifestations include.

- Being extremely parched
- Peeing a great deal
- Foggy vision
- Being irritable
- Shivering or deadness in your grasp or feet
- Exhaustion/understanding worn
- Wounds that don't mend
- Yeast contaminations that hold returning
- Craving
- Weight reduction easily
- Getting more diseases
- Dim rashes around your neck or armpits (called Acanthosis nigricans) that are regularly an indication of insulin opposition

Reasons for type 2 diabetes

Your pancreas makes a hormone called insulin. It enables your cells to turn glucose, a sort of sugar, from the food you eat into vitality [3]. Individuals with type 2 diabetes make insulin, however their cells don't utilize it just as they should.

From the outset, your pancreas makes more insulin to attempt to get glucose into your cells. Yet, in the long run, it can't keep up and the glucose develops in your blood [4]. Typically, a blend of things causes type 2 diabetes. They may include.

- Qualities. Researchers have discovered various bits of DNA that influence how your body makes insulin.
- Additional weight. Being overweight or large can cause insulin obstruction, particularly on the off chance that you haul your additional pounds around your center.
- Metabolic disorder. Individuals with insulin opposition frequently have a gathering of conditions including high glucose, additional fat around the abdomen, hypertension and elevated cholesterol and triglycerides.
- An excessive amount of glucose from your liver. At the point when your glucose is low, your liver makes and conveys glucose. After you eat, your glucose goes up, and your liver will typically back off and store its glucose for some other time. Be that as it may, a few people's livers don't. They continue wrenching out sugar.
- Awful correspondence between cells. Now and again, cells impart an inappropriate signs or don't get messages accurately. At the point when these issues influence how your cells make and use insulin or glucose, a chain response can prompt diabetes.

Broken beta cells. In the event that the cells that cause insulin to convey an inappropriate measure of insulin at an inappropriate time, your glucose gets distracted. High glucose can harm these cells, as well. C-Reactive Protein (CRP) is a protein made by the liver. CRP levels in the blood increase when there is a condition causing inflammation somewhere in the body. A CRP test measures the amount of CRP in the blood to detect

Correspondence to: Laily Najafi, Department of Endocrinology and Metabolism, Iran University of Medical Sciences, Tehran, Iran; E-mail: lailynajafi@yahoo.com

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inflammation due to acute conditions or to monitor the severity of disease in chronic conditions [5].

The correlation of serum high sensitivity C-reactive protein and ferritin as indicators of acute phase proteins were evaluated with type 2 diabetes microvascular complications which have not been examined in diabetic patients recently. So, we designed this study in order to consider the mentioned correlation [6].

This study was designed as a prospective cross-sectional study that included 230 people with type 2 diabetes. Diabetes microvascular complications were examined for all patients. Retinal status was evaluated by indirect ophthalmoscopy exam with dilated pupils and retinal color photography. Peripheral neuropathy was evaluated by michigan neuropathy screening instrument and spot urine for albumin/creatinin ratio was considered to diagnose diabetic nephropathy. Hs-CRP and ferritin were measured as indicators of acute phase proteins [7].

Hs-CRP mean was 5.2 ± 12.8 mg/L and for ferritin was 125.1 ± 112 ng/mL. Among all microvascular complications, diabetic nephropathy was statistically significantly related to the hs-CRP levels. High hs-CRP levels were correlated with a higher Alb/Cr ratio. Higher HbA1C was positively correlated with higher hs-CRP. No correlation was found between acute phase proteins and diabetic neuropathy and retinopathy. A significant odds ratio was illustrated for nephropathy and hs-CRP level (OR=2.62) by logistic regression analysis. No association between diabetes treatment and acute phase proteins was detected [8].

CONCLUSION

In this study; we conclude that measurement of hs-CRP can be useful for early detection of high risk individuals. Additionally,

diabetic nephropathy could be predicted by low-grade inflammation as an independent predictor.

REFERENCES

1. Guo L, Jiang F, Tang YT, Si MY, Jiao XY. The association of serum vascular endothelial growth factor and ferritin in diabetic microvascular disease. *Diabetes Technol Ther*. 2014;16(4):224-234.
2. Elimam H, Abdulla AM, Taha IM. Inflammatory markers and control of type 2 diabetes mellitus. *Diabetes Metab Syndr*. 2019;13(1):800-804.
3. Zhou J, Wang N, Wang D, Zhao R, Zhao D, Ouyang B, et al. Interactive effects of serum ferritin and high sensitivity C-reactive protein on diabetes in hypertensive patients. *J Trace Elem Med Biol*. 2021;68:126824.
4. Hermans MP, Ahn SA, Rousseau MF. Increased CRP: An extended biomarker of microvascular risk in men with type 2 diabetes. *J Diabetes Complications*. 2019;33(11):107413.
5. Hermans MP, Ahn SA, Amoussou-Guenou KD, Balde NM, Rousseau MF. Do high ferritin levels confer lower cardiovascular risk in men with type 2 diabetes. *Diabet Med*. 2010;27(4):417-422.
6. Kashinakunti SV, Rangappa M, Kallaganada GS. Serum high sensitive-c reactive protein levels in type 2 diabetes mellitus-a case control study. *Int J Biochem Res Rev*. 2016;11(4):1-8.
7. Sung KC, Kang JH, Shin HS. Relationship of cardiovascular risk factors and serum ferritin with C-reactive protein. *Arch Med Res*. 2007;38(1):121-125.
8. Ashourpour M, Djalali M, Djazayeri A, Eshraghian MR, Taghdir M, Saedisomeolia A. Relationship between serum ferritin and inflammatory biomarkers with insulin resistance in a Persian population with type 2 diabetes and healthy people. *Int J Food Sci Nutr*. 2010;61(3):316-323.