## A REVIEW ON CEROPLASMIN ACTIVITY IN PLASMA OF DIABETIC PATIENTS

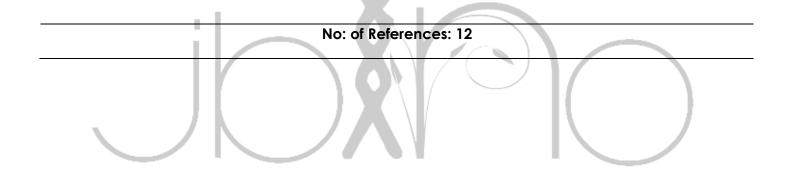
Mohammad Chand Jamali (1), Hayate Javed(2) Shashi Kumar(3) Shabnam Naaz(4)

- 1. Deputy Head- Department of Health & Medical Sciences, Khawarizmi International College, Al Ain, Abu Dhabi, UAE
- 2. Medical Research Specialist- Department of Anatomy, College of Health & Medical Sc, UAE University, Al Ain, UAE
- 3. Head- Nephrology Department, Paras HMRI Hospital, Patna 800013 India.
- 4. Resident Medical Officer, Nephrology Department, Paras HMRI Hospital, Patna 800013 India.

#### **ABSTRACT**

Type II Diabetes Mellitus (Type II DM) is a metabolic disorder characterized by glucotoxicity and lipotoxicity. Markers of glycemic control are HbA1c, fasting blood glucose and postprandial blood glucose. There are altered lipid parameters in Type II DM which possess significant cardiovascular risk to the patient. In the present study we are investigating about ceroplasmin activity on diabetic patients.

**Keywords:** Vincristine, Cancer, Ceruplasmin, Chemotherapy.



Corresponding Author: Mohammad Chand Jamali, Deputy Head- Department of Health & Medical Sc, Khawarizmi International College, Abu Dhabi, UAE Email: <a href="mailto:mjamali68@gmail.com">mjamali68@gmail.com</a>

### INTRODUCTION

Type II diabetes mellitus (Type II DM) is a chronic progressive disease characterized by hyperglycaemia and dyslipidemia that later leads complications. cardiovascular Other complications affecting kidney, eye and nervous system can also occur. Hyperglycaemia impairs alucose metabolic pathways and increases autooxidative glycosylation and free radical production. Deranged lipid status favours free radical-induced lipid peroxidation and leads to deposition of oxidized lowdensity lipoprotein (LDL) cholesterol resulting in atherosclerosis of blood vessels.1 Hyperglycaemia in long run causes toxic effects on macro as well as microvascular structure and affects proper functioning of organs. The present study is designed to know the status of the serum ceruloplasmin in the type II diabetes mellitus and to study correlation of the ceruloplasmin with glycemic status and lipid profile. This study tries to find the association of ceruloplasmin with lipid.

# **DISCUSSION**

Ceruloplasmin was found to be higher in diabetic group than non-diabetic group. Similar findings have found in various studies conducted in by Jung Lee M et al 2015 in Korea and Nasif ZN et al 2010 in Iraq.8 the cut off value of serum ceruloplasmin for distinguishing diabetic and non-diabetic group was in our study 46.5 mg/dL which has sensitivity of 87.5% and specificity of 62%. Similarly, serum glucose level was high in participants with high serum ceruloplasmin level. Overall, considering both groups; hyperglycaemia correlates with serum ceruloplasmin.

Surprisingly hyperglycaemia does not correlate with serum ceruloplasmin in diabetic The group. probable explanation may be that ceruloplasmin increases in diabetic group but does not fluctuate considerably in the diabetic range. Similarly, considering both groups ceruloplasmin correlates with age, fasting glucose, post prandial glucose, glycated haemoglobin, triglycerides and TG/HDL-C Thus, it implies that triglycerides and TG/HDL-C ratio which is substitute marker of insulin resistance could be reflected by ceruloplasmin. Ceruloplasmin could be substitute to mark the insulin resistance. In the diabetic group HbA1c is correlated with ceruloplasmin. Thus, glycemic index correlates with inflammatory status, as ceruloplasmin indicates the inflammatory status of the body. Further, LDL-C, TC/ HDL-C ratio and LDL-C/HDL-C correlates with ceruloplasmin. The importance of this correlation is highlighted by the fact that LDL-C is one of the key factors for development of atherosclerosis Epidemiological suggests that serum ceruloplasmin may be an important risk factor predicting myocardial infarction and cardiovascular disease. This is because ceruloplasmin is a potent catalyst of LDL oxidation. Several studies have observed that LDL-C/HDL-C carotid ratio predicts intima-media thickness progression and it predicts better than other lipid ratios. Similarly, TC/HDL-C ratio variation is associated with more substantial alterations metabolic indices predictive of ischemic heart disease risk and related to the insulin resistance syndrome. TC/ HDL-C ratio is the substitute for metabolic index and its correlation with ceruloplasmin verifies importance the of serum

ceruloplasmin monitoring in total cholesterol and manage accordingly TC, and TG/HDL-C correlation ceruloplasmin is seen in female diabetic group. For male in diabetic group HbA1C LDL-C/HDL-C ratio correlated sianificantly with ceruloplasmin. The probable reason may be due to that the cut off for TG/HDL-C ratio is lower for female. The clinical implication may be that, the female population should get benefit by controlling their lipid level. We could assume that the response of inflammatory status differs between male and female in the diabetic group. It also indicates our approach and priorities during treatment of hyperlipidemia in diabetic population.

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