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## Iron metabolism in type-1 diabetes: Relation to insulin resistance

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**Introduction & Aim:** An evidence-based association was established between iron metabolism and insulin-resistant (IR) conditions, among which was type-2 diabetes. Previous studies have reported elevated hepcidin and ferritin levels in type-2 diabetics. The purpose of the study is to investigate the possible relationship between hepcidin or ferritin and the development of IR in type-1 diabetes mellitus (T1DM).

**Methodology:** The study included 60 male participants who were categorized as follows: 20 patients having T1DM with IR (group-1), 20 patients having TIDM without IR (group-2) and 20 age-matched and BMI-matched healthy individuals. IR was evaluated using estimated glucose disposal rate (eGDR) and insulin (U/day). All patients were tested for fasting blood sugar, postprandial blood sugar, hemoglobin A1c, lipid profile, high-sensitivity C-reactive protein, C-peptide, ferritin and hepcidin.

**Findings:** Serum hepcidin showed a non-significant difference between group-1 and 2 and was not correlated to any IR-related variables. Serum ferritin was significantly higher in group-1, positively correlated to BMI, waist circumference, insulin (U/kg/day) and negatively correlated to eGDR. Out of all the significantly correlated variables, the hemoglobin A1c and waist/hip ratio were able to predict eGDR using the multivariate analysis.

**Conclusion:** Hepcidin plays no role in T1DM IR patients. Although ferritin was higher in T1DM patients and was negatively correlated to eGDR, it failed to demonstrate an independent influence on eGDR, hindering its potential use as a predictor of IR.

### Biography

Iman Z Ahmed is Consultant Endocrinologist since 2009. She has received her MBBCH and MD from Ain Shams University School of Medicine, Cairo, Egypt. She has completed her Internship and Residency in Internal Medicine as well as her training in Endocrinology and Metabolism at Ain Shams University Hospitals, which are tertiary hospitals in Cairo. Her specific clinical interests include diabetes, thyroid disorders in addition to pituitary/adrenal disorders. Her current research involves studies on the link between type-1 diabetes and insulin resistance.

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