

Treatment Regime and Trace Metals Homeostasis in Female Diabetic Patients

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ABSTRACT Introduction: Trace elements are supposed to play a role in carbohydrate metabolism as reported by many researchers . A number of studies have reported that imbalance of certain trace metals cause diabetes and vice versa

Objective: The aim of the study was to compare serum level of Chromium (Cr) and Zinc (Zn) in young adult female type-1 and type-2 diabetic subjects treated with Combination insulin and Sitagliptin/Metformin combination therapy in Khyber Pakhtun Khwa Pakistan.

Methodology: The study population includes 124 type-1 and 137 type-2 female diabetic subjects aged 18-45 years (n=261) .Data from the study subjects regarding their age, weight, height, and medical history was collected on a well-designed proforma after their informed consent. Fresh samples of blood were taken from 261 female diabetic subjects in a Gel tube. HbA1c was determined on BIO-RAD VARIANT II TURBO using HbA1c Kit ?2. Serum Zinc and Chromium were determined by atomic absorption spectrophotometer using acetylene flame (Model Perkin Elmer AAS 700) under standard conditions.

Results: The mean value of HbA1c of type-1 study population (10.62%) was higher as compared to the mean HbA1c of type-2 (8.32%). The mean level of serum Zn in type- I study population (0.04 mg/L) was higher than type-2 (0.03 mg/L) study population. The mean level of serum Cr in type-I study population (0.04 mg/L) was higher than type-2 study population (0.02 mg/L). Bivariate Pearson's Correlations analysis of serum Zn (mg/L) with HbA1C (%) shows a highly significant correlation (?=0.00).

Conclusion: The findings of this study suggest that treatment with insulin may be a better option in term of trace metal homeostasis in this selected group of patients. **Key words:** Trace metals; Diabetes; Zinc; Homeostasis