

TITLE: A STUDY TO CORRELATE SERUM MAGNESIUM, SERUM CALCIUM, HbA1c AND NERVE CONDUCTION PARAMETERS IN TYPE 2 DIABETES MELLITUS

ABSTRACT

INTRODUCTION: Type 2 Diabetes Mellitus is an iceberg disease which cause significant economic burden to the global health-care system. Hyperglycemia develops slowly over years and so the typical features of diabetes mellitus are often masked. **AIM & OBJECTIVES:** 1.To correlate serum magnesium, serum calcium, HbA1c and nerve conduction parameters in type 2 DM 2. To compare these parameters in newly diagnosed type 2 DM and type 2 DM with duration more than 5 years. **MATERIALS and METHODS:** This cross-sectional study involves 75 subjects who were divided into 2 groups. First group contains 45 newly diagnosed type 2 DM and second group contains 30 type 2 DM with duration of disorder more than 5 years. Serum magnesium, calcium, HbA1c, nerve conduction studies were done. Statistical analysis was performed by IBM SPSS version 20.0 software. Two sample 't' test was used to compare the mean difference between groups. Pearson correlation analysis was used to check the correlation between nerve conduction parameters. **RESULTS and CONCLUSION:** The mean differences of all parameters except serum calcium were significant statistically. There was a positive correlation between HbA1c and latency of nerves and a negative correlation between serum magnesium and latency of nerves in both groups. All results were similar to previous related studies except that lower limb nerve did not show more significant correlation than the upper limb nerves in relation to the glycemc status. Serum magnesium had good correlation with the glycemc status and nerve conduction parameters in both groups. Hence, serum magnesium is a mandatory test to be done for patients with long-standing diabetes and poorly controlled diabetes mellitus. This

study has brought out the significance of nerve conduction studies in early stages of the disease.

KEY WORDS: Type 2 Diabetes mellitus, serum magnesium, serum calcium, HbA1c, nerve conduction study