

20<sup>th</sup> Asia Pacific

# DIABETES CONFERENCE

July 16-17, 2018 Sydney, Australia

## Estimation of serum magnesium levels as an indicator of diabetes mellitus type-2: A case control study

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Hypomagnesaemia has been reported to occur in diabetic patients. Studies have shown that magnesium levels are lower in diabetic patients compared with non-diabetics and that magnesium deficiency has a negative effect on post receptor signaling of insulin. Our present study was done with an objective to evaluate the serum magnesium and random blood glucose in type-2 diabetes mellitus and compare them with normal and to evaluate the role of serum magnesium as an indicator of type-2 diabetes mellitus. The study was done for a period of 3 months from May 2017 to July 2017 in which 37 controls and cases were included. Persons with type-2 diabetes of age 18 and above as cases and similar age group as controls in patients are included in the study. Patients with type-1 diabetes mellitus, chronic diarrhea, impaired renal function, people on diuretics, chronic alcoholics, people with hypomagnesaemia symptoms will be excluded from study. The samples were analyzed on semi-autoanalyzer using ChemChek magnesium kit which is based on Xylidyl Blue with ACTS method and random blood glucose level was measured GOD-POD (glucose oxidation) method. The obtained p-value for the given data set is 0.9941, with alpha level of 0.1 (for type-1) error, it is evident that the p-value is significantly higher than that of the alpha level. The mean magnesium value for control subjects was 2.19 mg/dl and for diabetic subjects it is 1.8624 mg/dl. From the mean values of the magnesium levels for both the populations, hypomagnesemia reported to be occurring in diabetics than controls which may be an act as a risk factor for diabetes and as biomarker.

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