

ABSTRACTS OF RESEARCH PAPERS

RP 07

Correlation between Serum Magnesium and Glycated Haemoglobin Levels in Type 2 Diabetic Patients Who are Attending Diabetic Centre, Teaching Hospital, Jaffna

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Introduction

Determination of glycated haemoglobin (HbA_{1c}) values provides more significant information regarding diabetic control. Magnesium has a major role in improving insulin sensitivity and preventing diabetes and its cardiovascular complications. Hypomagnesaemia leads to reduced insulin sensitivity and it occurs exponentially with duration of disease. Aim of the study was to find the correlation between serum magnesium and HbA_{1c} levels in type 2 diabetes mellitus (DM).

Methods

This was a laboratory based experimental study. Systematic sample collection method was used for sample collection. Serum magnesium was estimated by Calmagite method. HbA_{1c} and haemoglobin were measured by turbidimetric inhibition immunoassay and modification of alkaline hematin reaction, respectively. Pearson correlation coefficient was used to assess the correlation between serum magnesium and HbA_{1c} levels. Ethical clearance was obtained from Ethics Review Committee.

Results

Out of 41 type 2 DM (aged 20-79 years), 18 (43.90%) were males and 23 (56.09%) were females. Mean (\pm SD) age was 56.08 (\pm 11.78). Mean (\pm SD) value of serum magnesium and HbA_{1c} were 1.838 (\pm 0.368) mg/dL and 7.837% (\pm 1.092), respectively. Twenty four percent had hypomagnesaemia and 90% of them had moderate or poor glycaemic control. There was no significant correlation between serum magnesium and HbA_{1c} levels in type 2 DM patients ($r = -0.052$, $P = 0.747$) but, there was a significant negative correlation between serum magnesium level and the age ($r = -0.394$, $P = 0.011$).

Conclusions

Normal magnesium levels were observed in majority of patients and there was no significant correlation between serum magnesium and HbA_{1c} levels in type 2 DM patients.

Keywords

Glycated haemoglobin, type 2 diabetes mellitus, serum magnesium