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Research on Chronic Diseases

A study of glycemic variability in patients with type 2 diabetes mellitus with obstructive sleep apnea syndrome using a continuous glucose monitoring system

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Biography

Suhas Khaire is practicing endocrinologist at TNMC Mumbai, Maharashtra ,India. He has international Publication in glycemic variability in diabetes and OSA. He has also worked extensively in diabetes in acromegaly. His keen areas of interest are young diabetes, gestational diabetes, thyroid disorders, pediatric endocrinology. He has won many quiz competition in national level in endocrinology and also presented posters in various conferences. He is member of Endocrine Society of India.

Abstract

Background: Obstructive sleep apnea syndrome (OSAS) in association with type 2 diabetes mellitus (DM) may result in increased glycemic variability affecting the glycemic control and hence increasing the risk of complications associated with diabetes. We decided to assess the glycemic variability (GV) in patients with type 2 diabetes with OSAS and in controls. We also correlated the respiratory disturbance indices with glycemic variability indices.

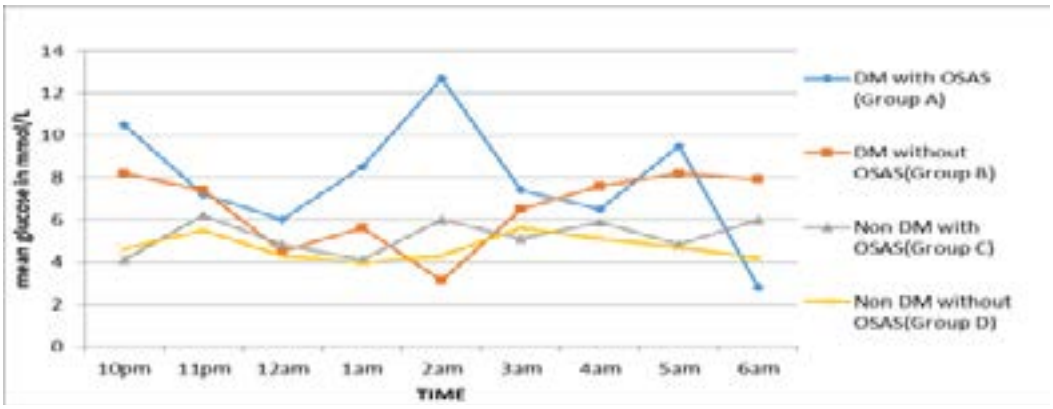
Methods: After fulfilling the inclusion and exclusion criteria patients from the endocrinology and pulmonology clinics underwent modified sleep apnea clinical score (SACS) followed by polysomnography (PSG). Patients were then divided into 4 groups: Group A (DM with OSAS, n=20), Group B (DM without OSAS, n=20), Group C (Non DM with OSAS, n=10) and Group D (Non DM without OSAS, n=10). Patients in these groups were subjected to continuous glucose monitoring using the Medtronic iPro2 and repeat PSG. Parameters of GV: i.e. mean glucose, SD (standard deviation), CV (coefficient of variation), night SD, night CV, MAGE and NMAGE were calculated using the easy GV software. GV parameters and the respiratory indices were correlated statistically.

Results: All the four groups were adequately matched for age, sex, body mass index (BMI), waist circumference (WC) and blood pressure (BP). We found that the GV parameters night CV, MAGE and NMAGE were significantly higher in group A as compared to group B (p values <0.05).Similarly Night CV, MAGE and NMAGE were also significantly higher in Group C as compared to Group D (p value <0.05). Apnea-hypopnea index (AHI) correlated positively with Glucose SD, MAGE and NMAGE in both diabetes (Group A plus Group B) and non- diabetes groups (Group C plus Group D).

Conclusions: OSAS has a significant impact on the glycemic variability irrespective of glycemic status. AHI has moderate positive correlation with the glycemic variability.

Publications

Prevalence and predictors of abnormal glucose tolerance and its resolution in acromegaly: Single Centre retrospective study of 90 cases



Mean glucose profile curves of all groups from 10 pm to 6 am. Patients showing increased glycaemic variability in group A than group B and increased variability in group C than group D

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