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A Silent Duo: Overlooked Vitamin D and Adiponectin deficiency in Neuro - Metabolic obesity among young adults of Assam

Vidhya Srinivasan¹, Pasang Drema Goiba¹, Akshay Chandra Deka²

¹Department of Medical Laboratory Technology, School of Allied Health Sciences, Girijananda Chowdhury University, Guwahati, Assam, India

²Department of Pathology, Assam down town University, Guwahati, Assam, India

Corresponding Author email: vidhu.archu@gmail.com

Introduction:

Obesity is an epidemic globally. Increasing prevalence of obesity is a major concern in adults which in turn increases the risk of Type 2 Diabetes mellitus, cardiovascular diseases (CVD), metabolic syndrome and Neurobehavioral disorders.

Aim:

This study aims to investigate the association of Vitamin D, serum adiponectin levels, anthropometric markers and lifestyle related neurobehavioral factors in obesity among young adults

Methods:

A cross-sectional pilot study was conducted among 100 adult participants in the age group 18- 40 years in Assam. Serum 25 hydroxy vitamin D was measured using FIA method. Serum Adiponectin was estimated using ELISA. Participants completed a structured questionnaire on dietary habits, sleeping pattern, lifestyle, physical activity and also undergone physical examination viz body mass index and waist hip ratio. The statistical analysis was performed using the statistical software SPSS.

Results:

Our study reveals that 57% of the study population were overweight and obese based on their BMI. 63% of the study population have hypovitaminosis D. Hypovitaminosis D significantly and negatively correlated with higher BMI ($p < 0.01$) in the study population. Serum Adiponectin levels were in the range of 6-20 μ g/ml. However, serum adiponectin is significantly decreased and negatively correlated with higher BMI ($p < 0.001$). A positive association was observed between higher BMI and behavioral lifestyle patterns including irregular sleeping habit, lesser physical activity, increased smoking and alcohol consumption

Conclusion:

The results from our pilot study shed light on the increasing prevalence of Obesity among young adults. Reduced vitamin D and adiponectin levels are significantly associated with higher BMI and adverse lifestyle behavioural in young adults, reinforces obesity as a treatable neuro metabolic disorder requiring integrated nutritional and behavioural interventions.

Keywords: Vitamin D, Obesity, BMI, Vitamin D deficiency