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Association of cognitive decline and depression with Vitamin D in type 2 diabetes mellitus patients

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Abstract

The prevalence of diabetes has substantially increased globally over the period of time. Various clinical evidence suggests that 90% cases of type 2 diabetes (T2DM) could be attributed to modifiable habits. A positive association between type 2 DM and mild cognitive impairment (MCI) has been reported by many studies that is attributable to the disease. Another complication associated with Diabetics is depression in comparison to persons without diabetes. On the basis of evidence from animal and human studies, vitamin D (VD) has emerged as a potential risk modifier for T2DM. Thus, based on the available data, the aim of the study was to assess effect of vitamin D levels on development of cognitive decline and depression in T2DM patients. A case-control study was conducted, including 88 subjects, 44 in each group (for depression). A total of 70 cases of DM2 and 70 healthy controls had been included in cognitive study. Prevalence of CI and depression was assessed using mini-mental state examination and patient health questionnaire-9, respectively. Blood samples for estimation of VD were collected. Serum VD levels were found to be significantly lower in diabetics as compared to the controls. Additionally, the overall prevalence of hypovitaminosis D among T2DM participants was higher than in controls. The prevalence of CI was found to be significantly higher in cases than in controls. The total scores of MMSE were significantly lower for cases than controls. Moreover, the total scores for PHQ-9 was found to be higher incases than in controls. It was concluded that CI is more prevalent in DM2 patients as compared to healthy subjects. Additionally, prevalence of depression is higher in DM2 patients as compared to healthy individuals. A decline in vitamin D levels could be explored to ascertain its involvement in the same.

Biography

Nidhi Bharal Agarwal completed her education in Pharmacy from Jamia Hamdard and did her PhD in Medical Pharmacology from University College of Medical Sciences. Presently, she is working as an assistant professor in Centre for Translational and Clinical Research, Jamia Hamdard. She has more than 10 years of extensive teaching and research experience. Her primary area of research interest is neuro-behavior, neuropharmacology, clinical pharmacology, clinical research and clinical oncology. She has won Young Investigator Award at International Society for Pharmacoeconomics and Outcomes Research, in 2014, and Best Paper Award in oral presentation at Indian Society for Rational Pharmacotherapeutics, in 2009. She holds membership of National Academy of Medical Sciences; Indian Pharmacological Society and Pharmacy Council of India. She has actively guided about 9 Ph.D. and 40 M.Sc. students in planning and executing their research projects.

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