STUDENTS' CORNER
LETTER TO THE EDITOR

Hypovitaminosis D and dementia risk-should Pakistan be worried?

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Madam, According to World Health Organization statistics, about 10 million new cases of dementia are reported annually, with residents of low- and middle-income countries such as Pakistan constituting 60% of cases, a number that is concomitantly rising as the global population ages.[1] This translates to a greater burden on healthcare systems that already lack a financial and technical workforce; this creates a profound psychological impact on family members, particularly those who take on the daunting role of caregivers. Costs of treatment, diagnosis, consultation, management, and in some cases institutionalisation, represent an immense financial liability. Cultural attitudes towards mental disorders in Pakistani society tend to be negative, and there is a lack of support for dementia patients and their families. Therefore, it is of paramount importance to explore and invest in preventive strategies that aim to reduce the incidence of neurodegenerative diseases among the geriatric population.

A growing body of medical evidence suggests a strong link between serum vitamin D concentrations and the risk of developing dementia in the geriatric population.[2] A prospective study published in 2022 analysed data from over 294,000 participants in the United Kingdom and sought to investigate the association of 25-hydroxyvitamin D [25(OH)D] concentrations with the risk of dementia and stroke.[3] Individuals with low serum [25(OH)D], defined as less than 25 nmol/L by the authors, had a 54% increased risk of dementia compared with those who had normal levels, i.e., 50 nmol/L or more. It also reported that up to 17% of dementia cases in the population could be prevented if the blood levels of vitamin D were raised to normal values. While the exact mechanism that underlies its role in neurophysiology is still unclear, it is believed that vitamin D may have neuroprotective effects such as reducing inflammation and amyloid levels in the brain, in addition to stimulating neuronal growth and maturation.[3]

The current statistics on the prevalence of low vitamin D status in Pakistan are not very encouraging. A cross-sectional study published in 2022 assessed serum vitamin D levels of over 26,000 patients in Karachi who had been referred to a diagnostic laboratory from general outpatient departments.[4] Vitamin D deficiency (VDD), defined as a serum level of [25(OH)D] below 20 ng/ml, was reported in 56% of the sample, and in 45% of older adults above the age of 50. Similar results were reported by a study with over 4800 participants from Punjab and Khyber Pakhtunkhwa.[5] Low vitamin D status among Pakistanis can be attributed to a variety of factors. Many people cannot afford nutritional sources such as eggs and dairy, and many lack awareness about VDD. Limited sun exposure is also a contributing cause, especially in urban areas. It is also a problem for the elderly, as they are more likely to be housebound due to mobility issues and underlying health conditions.

The association between hypovitaminosis D and dementia risk should be taken seriously, especially keeping in view the high prevalence of VDD in Pakistan. Public health initiatives encompassing awareness campaigns, food fortification programmes, subsidizing vitamin D supplements and widespread screening for low vitamin D status will be a crucial step towards addressing this concern.

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