STUDENTS' CORNER
LETTER TO THE EDITOR

Reversing cognitive decline: Role of intensive lifestyle interventions in dementia and mild cognitive impairment

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Dear Madam, Pakistan bears a significant burden of Alzheimer's disease (AD) with an estimated 150,000 to 200,000 individuals affected[1] with 4.6 million new cases of Alzheimer's disease appearing worldwide each year.[2] Current barriers to treatment include under recognition, finances, limiting diagnostic investigations and treatment compliance. Current treatment modalities rely on prescribing any of the first line drugs of which only rivastigmine and memantine are marketed in Pakistan. Unfortunately, the continued cost can be prohibitive for many patients.[3]

Effect of intensive lifestyle modifications was conducted in a 1:1 randomised control trial to check its effect on progression of early dementia or mild cognitive impairment due to AD. Results of 20 week change of diet(low in refined carbohydrate, processed food, sweeteners and harmful fats) ,exercise, stress relaxation techniques, support groups and supplements(Omega-3 fatty acid, vitamins and minerals) in intervention group showed improvement in cognition and function measured by the AD Assessment Scale–Cognitive Subscale (ADAS-Cog) (p=0.053),CGIC (Clinical Global Impression of Change) (*p*=0.001),and CDR-G (Clinical Dementia Rating Global) testing (*p*=0.037) and no progression in CDR-SB (Clinical Dementia Rating Sum of Boxes) test. On the other hand, control group declined in all four measurements. Aβ42/40 ratio, a key Alzheimer's biomarker, showed 6.4% increase in the lifestyle group but 8.3% decrease in the control group (*p*=0.003), suggesting less amyloid buildup in the brain in the intervention group. Other important biomarkers also improved in the intervention groups which were LDL-cholesterol, ketone bodies, and glycated haemoglobin (HbA1c). This study showed intensive lifestyle modifications were required to stop the progression of mild cognitive impairment, compared to moderate changes as shown by analysis adherence to lifestyle changes of 120.6% for CDR-SB and 95.6% for CDR-Global tests improvement.[4]

In Pakistan, where treatment compliance is a significant problem, these lifestyle-driven improvements could slow cognitive decline and reduce healthcare cost. Implementing such modifications of diet, supplements such as omega-3 fatty acids (obtained by including fish, flaxseeds, chia seeds and walnut) in diet, support groups, daily exercises in nursing homes and community centre could help provide a practical, non-pharmaceutical approach to improving cognitive function. To support this government should take an active role by issuing guidelines in old age homes and community programmes, ensuring necessary steps are taken to encourage attendants of elderly to help them engage in exercise. By integrating lifestyle-based strategies in health initiatives, Pakistan could take a proactive approach in addressing the growing burden of dementia, resulting in better health outcomes.

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