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Assessment of nutritional status of geriatric subjects suffering from vascular dementia

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Introduction: Vascular dementia (VaD) has been shown to have a detrimental effect on the nutritional status of the geriatric population; whereas, malnutrition has been suggested as an important risk factor for onset and progression of VaD. There is little published data regarding nutritional status of geriatric population suffering with VaD. Hence, the present study was conducted.

Method: A hospital based cross-sectional observational study was conducted in the year 2014-2015 in New Delhi. A total of 48 subjects suffering with VaD confirmed as per NINDS AIREN criteria, aged 55 years and above were enrolled. Data was collected on socio-demographic profile, clinical profile of vascular disease risk factors, mini nutritional assessment, dietary intake (24 hr food record and food frequency questionnaire), anthropometric profile from all the subjects.

Results: We found that 69% (n=33) of the subjects were at risk of malnutrition. Subjects with moderate VaD had significantly worse nutritional status ($p<0.01$) as compared to the subjects with mild VaD. With increasing severity of VaD, the nutritional status of the subjects declined significantly ($p<0.01$). Subjects with moderate VaD had lower nutrient intake and adequacy for all nutrients than subjects with mild VaD.

Conclusion: The nutritional status of subjects with VaD is poor due to several factors. There is a need for initiating timely dietary interventions to improve the overall nutritional status and prevent further nutrition related complications in subjects with VaD. This may aid in alleviation and reversal of symptoms of dementia amongst the subjects.

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Memantine improves cognitive function postoperatively

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Statement of the Problem: Persistent impairment in general cognitive functioning postoperatively is reported by clinical studies and is labeled as postoperative cognitive decline (POCD), without specifying which exact cognitive functions are impaired. Animal studies focused on hippocampal injury resulting in memory decline, but also neglected other aspects of cognition. Evidence points to a malignant neuroinflammatory response as the mechanism underlying POCD, with subsequent synaptic impairment and cytokine-induced glutamatergic excitotoxicity. The objective of this study is to evaluate a spectrum of cognitive functions postoperatively, and to investigate the potential effect of memantine, an NMDA-receptor antagonist, on attenuation of POCD.

Methodology & Theoretical Orientation: Male mice were divided into memantine (M), and two placebo groups, A and B (PA, PB) (8-10 per group). Memantine was given at a therapeutic dose daily for 30 days prior to the surgery. The memantine and placebo-A groups received isoflurane anesthesia and analgesics, and then underwent a simple laparotomy procedure. The placebo-B group only received anesthesia and analgesia. Neurocognitive testing was then performed on postoperative days (POD) 1 and 7 using the Morris water maze (MWM) to assess memory, the open field test (OFT) for locomotor function and anxiety-like behavior, the tail suspension test (TST) for depression-like behavior, and the three-chamber test (TCT) for sociability and social novelty.

Findings: M-POD1 performed significantly better than PA-POD1 on the TCT ($p<0.05$) and the TST ($p<0.001$), and showed a tendency to improve on the MWM when compared to PB-POD1. M-POD7 also showed a significant improvement in the TST ($p<0.05$) and the MWM ($p<0.05$) when compared to PA-POD7, while TCT showed normal results in both groups. No significant difference was observed between placebo groups and memantine groups on the OFT.

Conclusion & Significance: Memantine may improve cognitive functions postoperatively, and could be investigated further as a prophylaxis for POCD.

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