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VITAMINS AS NEUROPROTECTANTS AGAINST OXIDATIVE STRESS CAUSED BY INTERMITTENT COLD EXPOSURE IN THE AGING RAT BRAIN**Sambe Asha Devi***

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While it is known that the brain is responsible for the maintenance and responses to environmental stress with increased vulnerability, studies relating to the role of antioxidant vitamins for oxidative stress control in its different regions are necessary for preventing the loss of function more so in the aged. Here in our study, we investigated the intervention of vitamins C and E on the oxidative stress (OS) biomarkers in the frontoparietal cortex (FPC) and hippocampus (HC) of adult (3 months), late-adult (12-months), middle-aged (18-months) and old (24 months) male Wistar rats that were exposed to intermittent cold (ICE) lasting 2h/day for 4 weeks. Supplement was a daily dose of vitamins C and E. ICE-induced OS was reflected in terms of age-related increases levels of hydrogen peroxide, protein carbonyl and thiobarbituric acid reactive substances in the FPC and HC. These changes were accompanied with increased neuronal damage in the FPC and HC. Our results demonstrate age as a significant factor in the severity of the OS during ICE. However, the extent of these changes was lowered by supplementation with vitamins C and E. Although it is not clinically proven for their benefits with ICE, it does offer hope as a nutritional intervention in alleviating the severity of the OS during cold exposures of an intermittent nature.

Biography

Asha Devi is Professor of Zoology and Co-ordinator of UGC-CPEPA Program at Bangalore University, India. She completed her postdoctoral studies from Hiroshima University, Japan (1988); University of Texas Medical Branch, USA (1993); and Tulane University Medical Centre, USA (1994). Her interest includes Exercise, Nutrition and Aging. She is a recipient of Commonwealth Fellowship, Aberdeen (2007) and INSA-JSPS visiting Fellowships, University of Tokyo (2005 and 2012). Asha has published several papers/chapters and is a referee for journals of high repute. She is a member of SFRR, IABS, IAN, IAGG (India) and has received research grants from UGC, DST, DRDO and ICMR.

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