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Age-based vulnerability to stress in animal model of post-traumatic epilepsy

Stanzin Ladol
Jawaharlal Nehru University, New Delhi

This study aimed to investigate alteration in the susceptibility to stress in various age-groups experimental model of post-traumatic epilepsy. Post-traumatic epilepsy is defined by episodes of recurring seizures secondary to severe brain injury. This involves increased intracranial pressure, excessive release of neurotransmitters, increased metabolic brain demands. Additionally can results in cellular stress and anxiety behaviour. This can become a cyclic phenomenon with the seizures causing stress and the stress resulting in more seizures. Forty-eight Male Wistar rats were used for this study. Animals were randomly divided into eight groups (n=6). For Young (4-6 months) age group, Group 1: Control. Group 2: Control + Treated. Group 3: Epileptic. Group 4: Epileptic + Treated. For Old (16-20 months) aged group similar grouping trend was followed. Open-field test was performed to test the anxiety-like behaviour through different parameters such as ambulatory activity, rearing, and defecation. Epileptic rats exhibited significant increases in defecation index and a significant decrease in ambulatory activity and rearing activity compared with control group in both young and old aged group. Bioactive natural compounds treatment significantly inhibited defecation and increased ambulatory activity in open-field tests. One-way ANOVA and Tukey post hoc tests revealed that dietary supplementation was effective in reducing the anxiety associated with epilepsy. Quantitatively greater anxiety and fear were observed in old epileptic group as compared to young epileptic group. Which imply that brain ageing can reduce the brain ability to recover effectively from epilepsy related anxiety behaviour. Our observation thus clearly indicate that supplementation with bioactive compounds inhibit the epilepsy-related stress and anxiety.

Biography

Stanzin Ladol is an Assistant Professor. She teaches Animal Sciences and Wildlife at the Central University of Jammu in India. She is pursuing her PhD in Neuroscience from School of Life Sciences, Jawaharlal Nehru University, New Delhi. She was awarded with various national and state fellowships. And she has participated in numerous International and National Conferences. She has years of experience in research, evaluation, and teaching. Her domain of expertise lies in the Stereotaxic surgery, animal behavioral studies, biochemical analysis, histology and basic molecular biology techniques. She grew up in the mighty remote hills of Ladakh in Trans-Himalayan region. Her love for nature is immense and deeply rooted. Her interest in epilepsy research and her passion to help poor and needy helps her going strongly with her work.

stladol22@gmail.com