PA-2 A NOVEL PHYTOCHEMICAL FORMULATION IMPROVES COGNITION IN ANIMAL MODELS RELEVANT TO ALZHEIMER’S DISEASE

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Introduction: Dementia is one of the age related mental problems and a characteristic symptom of Alzheimer's disease. There has been a steady rise in the number of patients suffering from Alzheimer's disease (AD) all over the world. It is the most common form of onset of adult dementia and attention deficit disorders. The Indian system of medicine, Ayurveda has been in practice since 5000 years.

Aim: The main objective of the studies reported here is to investigate the antiamnesic efficacies of PA-2 in mice.

Methods: Scopolamine, β-amyloid, ibotenic acid, CO2 and aging induced amnesia, KCN and Carotid artery ligation-induced hypoxia were the experimental models. Basal forebrain lesion induced decrease in cerebral Ach and ChAT activity were assessed, Concentrations of Norepinephrine, Epinephrine, Dopamine, 5-HT in cerebral cortex, cerebellum, hypothalamus, hippocampus, and corpus striatum were measured by HPLC analysis. Neuromorphology, contents of MDA, NO, activities of SOA and CAT were measured which indicated that PA-2 protected the animals from stress, amnesia and neurodegeneration.

Results: PA-2 inhibited KCN and Carotid artery ligation induced hypoxia, reversed amnesia and neurodegeneration and produced normalizing action on discrete regions of brain and controlled alterations in neurotransmitter levels due to neurodegeneration. They decreased ChAT activity in the parietal cortex and inhibited decrease in Ach levels in both parietal and frontal cortex in amnesic rats.

Conclusion: Hence PA-2 can be of enormous use in the treatment of memory dysfunctions.