MODULATION OF ALZHEIMER’S DISEASE BY HERBS WITH ANTIOXIDANT ACTIVITY

N. Amin¹, S. Pallewar¹, S. Belemkar¹, P. Mehta¹, G. Chakraborthy²

¹Pharmacology, ²Pharmacognosy, Narsee Monjee Institute of Management Studies, Shirpur, India

Introduction: Alzheimer’s disease (AD), most common cause of dementia, is characterized by a decline in cognitive function and accumulation of amyloid-β peptide (Aβ) in extracellular plaques. The ability of catalase to breakdown hydrogen peroxide generated in response to Aβ was suggested as a mechanism for catalase protection. Lipid peroxidation (marked by MDA level), a hallmark of oxidative tissue injury, also has been found to be elevated in AD.

Aim: To investigate the antioxidant protective role of Ocimum sanctum, Azadiracta nimba and their combination in aluminum induced oxidative stress in rodents.

Method: Albino white mice were randomized into 5 groups receiving daily treatment for 4 weeks: 1) Double distilled water p.o., 2) 4.2 mg/kg Aluminum chloride i.p, 3) Ocimum sanctum (200mg/kg p.o.) + 4.2 mg/kg Aluminum chloride i.p, 4) Azadiracta nimba (200mg/kg p.o.) + 4.2 mg/kg Aluminum chloride i.p, 5) Ocimum sanctum (100mg/kg) and Azadiracta nimba (100mg/kg) in (1:1) combination p.o. + 4.2 mg/kg Aluminum chloride i.p. The neurobehavioral effect was studied by tests such as elevated plus maze and pole climb avoidance test. After these tests brain homogenate was assayed for lipid peroxidation levels as well as for catalase activity.

Results: Group-3 and Group-4 has shown significant effect, while Group-5 has shown statistical potent activity in neurobehavioral tests and reduction in MDA level (P< 0.05) with increase in catalse level (P< 0.05) compare to Group-2.

Conclusion: This study indicates that Ocimum sanctum, Azadiracta nimba and their combination could be used in the management of AD.