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Editorial

Is AD, A Major Threat to Innocent Farmers?

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Alzheimer's disease (AD) is a progressive disorder of brain that leads to many complications. In addition to the occurrence of plaques, tangles and shrunken brain tissue, we can also notice loss of synaptic connections among neurons. Thus, structural and functional changes of brain lead to memory loss and finally affect routine life of patients. AD is due to genetics and environmental factors. The causes of AD have not been fully revealed and also investigation on AD is still incomplete. Prevalence of AD among people of rural areas is higher when compared with the urban population [1].

Environmental factors and human life style methods attribute nearly 30% of causation of AD. Environmental components include pollutants, pesticides and industrial chemicals [2]. Many food chemicals (colorants, preservatives, flavors, etc.) which are toxic are suspected to induce AD [3]. Our earlier report indicates that food flavor cinnamaldehyde (CNMA) at the WHO suggested acceptable daily intake (ADI) level induces behavioral changes of rats through oxidative stress [4,5]. Thus, CNMA is suspected to induce AD at certain extent. Bisphenol -A (BPA), a food chemical and an environmental estrogenic compound widely used in the manufacture of consumer products (bottles, electronic devices, etc.) enhances neurotoxicity that favors dementia [6,7].

The mode of fight against agricultural pests and house hold pests has been in use since 4500 BC. Pesticides have been used for many decades in the rural areas especially by the farmers for agriculture purpose. Functional aspects of all pesticides are of same by inducing oxidative stress and neurotoxicity. People in rural areas, especially the farmers, are highly exposed to pesticides induced health hazards. Pesticide exposure results in the incidence of AD [8]. Children who live in these pesticides affected areas will have more chances to develop cancer and behavioral problems [9].

Innocent farmers refer to the farmers of developing countries since they are unaware of pesticides exposure and toxicity. Not only, they are exposed to pesticides but also they are prevalent to other environmental pollutants. Their knowledge in the pesticide exposure, handling, and preventive measures is less or superficial and hence they are under a kind of threat to pesticides and pesticides induced dementia or AD. In developed countries, there are chances for the farmers to know about the activities of pesticides through the policy of government or social organizations; pesticide manufactures also have their policy to label their products in an appropriate method. Current regulations in the developed countries also minimize the effects of pesticides at a significant level. Changing the law/ policy of developing countries with reference to agriculture, educating safety methods to the farmers about the routine use of pesticides, encouraging the scientists and health care professionals to work on pesticides, routine consultation with physicians, etc., are some of the important methods to prevent pesticide exposure [10]. Organic farming and organic food consumption eliminate pesticide consumption at a significant level [11].

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