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Novel Neurorestorative therapy for Neurodegenerative diseases

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Tew research shows that an overactive immune system plays a powerful role in causing central nervous system inflammation and the destruction of neurons. It is hypothesized that non steroidal anti-inflammatory agents that cross the blood brain barrier could halt the release of these damaging immune factors and reduce risk of developing Alzheimer's disease (AD). Present FDA approved medications for AD can't reverse the natural course of the disease. A natural antioxidant, turmeric, plays a protective role in AD through immune modulation. Epidemiological studies in India, where turmeric consumption is widespread, suggest it has the lowest prevalence rates of AD in the world. Preclinical research work has already established the effectiveness of curcumin in lowering A β loads, alleviating neuroinflammation, preserving neurones and synapses and preventing hyper phosphorylation of tau proteins. However, because of poor bioavailability of curcumin and rapid biotransformation in blood, translation of curcumin's effectiveness in clinical settings is not fully observed. Encapsulation of curcumin bioactive compounds in nano-praticles which can cross blood brain barrier plays a significant role in neurorestoration by inhibiting glial proliferation and A β plaque formation. Curcumin C3 complex in patients with mild to moderate stage of the disease is being tried to understand the efficacy [through AD Assessment Scale, cognitive subscale (ADASCog), Neuropsychiatric Inventory (NPI), Activities of Daily Living Scale (ADCS-ADL)] the mechanism of action of curcumin (cholesterol levels, CSF isoprostanes, alpha-1-antichymotrypsin, C-reactive protein, tau, Aβ1-40 and Aβ1-42). A 24 week randomized double-blinded, placebo-controlled study of two doses of curcumin in persons with mild-to-moderate AD was promising.

Biography

Chitrangada Das Mukhopadhyay is an M Tech and PhD from Indian Institute of Technology, Kharagpur, India and gained postdoctoral experience in neuro biotechnology under eminent scientists at Ohio State University Medical centre, USA. She has more than 30 publications in reputed journals and sponsored research projects. Presently she is actively engaged in teaching and research and her research interest includes preparation of nano medicine from natural products to treat neurodegenerative diseases

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