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Neurotransmitters: Chemistry and their role in aging problems

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Neurotransmitters help to communicate and send/receive information all over the human body. From heart rate, blood pressure to fall asleep, these chemical messengers play a vital role. Chemically these are oxytocin, serotonin, GABA (γ -aminobutyric acid), glutamate dopamine, acetylcholine, noradrenaline, epinephrine and 5-hydroxytryptamine. Aging is an inevitable part of human development, which affects lifestyle in later stages.

Studies on neurobehavioral changes have observed that the concentration of the neurotransmitters in the elderly is altered significantly before the appearance of age related disorders such as Alzheimer Disease (AD) and Parkinson's Disease (PD). For instance, choline acetyltransferase and 5-hydroxytryptamine were fewer in brains of dementia patients. Serotonin (5-HT) neurotransmitter loss in the elderly population causes behavioral changes. Imbalances in cholinergic and serotonergic function may be responsible for cognitive impairment in AD.

Identification of neurotransmitters is important for identifying and fighting the aging process and related conditions. This kind of study will be helpful to establish a connection between aging and neurotransmitters. Ultimately, aging related problems can be curtailed by modifying these neurotransmitters.

Biography

Sunil Kumar received his PhD in Pharmacy from Punjab Technical University Jalandhar India. He has worked as a scientist at Arch pharmlabs ltd, Navi Mumbai, India. He also has worked as Assistant Professor from 2008 to 2011 at ISF College of Pharmacy, Moga, India. He has been awarded postdoctoral fellowship by National Science Council (NSC), Taiwan and performed his research work at Taipei medical University from 2013 to 2016, at National Taiwan University (NTU), 2017-2018 and Chang Gung University, taiwan 2018-2020. His research work is mainly based on medicinal and natural product chemistry specialized in anti-inflammatory and anti-cancer drug design. Dr. Kumar has cleared the prestigious GATE exam organized by IIT (Indian Institute of Technology). He has published more than 23 papers in reputed journals and has been serving as an editorial board member of a few journals.