Use of Spearman correlations and multiple regressions to understand the plausible integrated protective mechanisms of bee pollen as nutritional supplement against propionic acid-induced neurotoxicity in rodent model of autism

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Abstract

Autism is a complex neurobehavioral disorder with impaired growth and development of the brain. Its symptoms persist throughout the patient's life however early diagnosis together with the dietary therapy can improve the quality of patients' health. Bee pollen as a supplement may lead to relief of the autism symptoms as it is loaded with lot of nutrients, amino acids, vitamins, lipids and countless active substances. This animal based study investigated protective effect of bee pollen against autistic features which were induced in rodent model via PPA. Thirty young male western albino rats were divided into three groups such as , I as control group; II as rodent autistic model treated with 250 mg PPA/kg BW/day for 3 days and III as bee pollen protected group which was treated with bee pollen 250mg/kg body weight for four weeks before the induction of autism via PPA. Markers related to oxidative stress, apoptosis, inflammation, glutamate exitotoxicity, in addition to neurotransmitters were measured in brain tissue of all the groups. Our results showed diminution of GSH, 5HT, dopamine, GABA, and GABA/ Glutamate ratio, Vit C in PPA treated group and their enhancement in bee pollen protective group. Significant elevation of Glutamate, IFNγ, IL-1A, , IL-6, Caspase 3, lipid peroxide observed in PPA treated group were restored to normal in bee pollen –treated group. Our results strongly suggest bee pollen as good supplement against autism and can be helpful in improving the quality of life in patients suffering from this disorder.

I. Image:



II. Reference:

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III. Biography:

Afaf El-Ansary, female, biochemist, graduated from biochemistry department, Ain Shams University, Egypt in 1974. She worked in the National Reserch Centre, Egypt from 1976-2000, from 2001-2015 she work as teaching staff member in biochemistry department, King Saud University, KSA. Since 2016, she is working as senior scientist in the central laboratory, KSU. She is recorded as reviewer and editorial board member in many international journals. She got more than 140 published papers in high impact factor Journals related to this research interest. She is member in Predictive, Preventive and Personalized Medicine Society (Moscow).

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