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Common risk factors between polycystic ovary syndrome and alzheimer's disease

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Alzheimer's disease (AD) is the most prevalent progressive neurodegenerative disorder of the brain, and recent studies suggest a relationship between endocrinal dysregulation and neuronal loss during AD pathology. Polycystic Ovary Syndrome (PCOS) is one of the most common endocrine and metabolic disorders in premenopausal women, characterized by hyperandrogenism, chronic anovulation, and/or ultrasound evidence of small ovarian cysts. Obesity and insulin resistance are also the vital factors influencing the clinical manifestations of this syndrome. Knowing the common risk factors for Alzheimer's and PCOS may eliminate them and prevent neurodegenerative Alzheimer's disease in the future. Neurosteroids and sex steroids have been suggested as one of the reasons for reducing the pathology of AD. Alzheimer's is more usual in women than men, and estrogen depletion is generally associated with an increased risk of AD. The age-related decrease in brain levels of testosterone in men and 17β-estradiol (E2) in women during menopause has been correlated with a greater risk of developing AD. As Alzheimer's patients have risk factors similar to those of PCOS, such as insulin resistance, vitamin D deficiency, sexual hormonal changes, inflammation, and sleep disorders, it may be hypothesized that PCOS may elevate the risk of Alzheimer's disease. In a study we summarized the possible pathways that may explain the association between Alzheimer's and PCOS. According to our research, the factors involved in Alzheimer's and PCOS disorders may share some common risk factors. In patients with PCOS, increased LH to FSH ratio, decreased vitamin D, insulin resistance, and obesity are some of the most crucial factors that may increase the risk of Alzheimer's disease.

Recent Publications

1. Sarahian N, Noroozzadeh M, Saei Ghare Naz M, Eskandari-Roozbahani N, Mahboobifard F, Ramezani Tehrani F. Is there any association between migraine headache and polycystic ovary syndrome (PCOS)? A review article. Molecular biology reports. 2021 Oct 15:1-9.

2. Taherianfard M, Riyahi M, Razavi M, Bavandi Z, Eskandari Roozbahani N, Namavari MM. The Cataleptic, Asymmetric, Analgesic, and Brain Biochemical Effects of Parkinson's Disease can be Affected By Toxoplasma Gondii Infection. BioMed Research International. 2020 May 5;2020.

3. Eskandari-Roozbahani N, Shomali T, Taherianfard M. Neuroprotective effect of Zataria Multiflora essential oil on rats with Alzheimer disease: A mechanistic study. Basic and Clinical Neuroscience. 2019 Jan;10(1):85.

Biography

Narges Eskandari Roozbahani was born on 2nd March 1981 in Kermanshah, Iran. She is working as a researcher in Clinical Research Development centre at Kermanshah University of Medical Science, Kermanshah, Iran. She completed her Ph.D. in Pharmacology under the supervision of Dr. Shomali on Effect of ZM Boiss essential oil in Alzheimer's Disease in Shiraz University in 2018. She completed her M.sc in Physiology with the project titled Effect of garlic extract on formalin pain under the supervision of Dr. Sajedianfard in 2013. Her research interests include Bioinformatics, Pharmacology, Metabolic disorder, Cancer, Herbal drugs, Toxicology and Alzheimer's Disease. She has published more than 20 research articles in the international journals in the areas of her interest.

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