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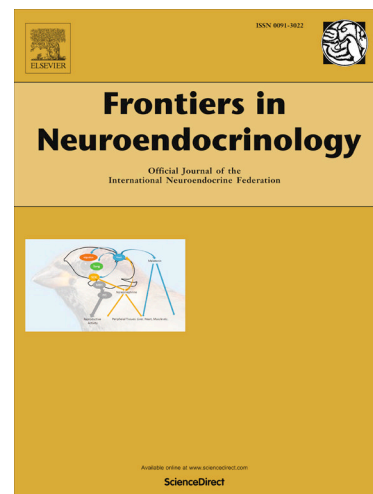
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Estrogens and the cognitive symptoms of schizophrenia: possible neuroprotective mechanisms

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Abstract

Schizophrenia is a complex neuropsychiatric illness with marked sex differences. Women have later onset and lesser symptoms, which has led to the hypothesis that estrogens are protective in schizophrenia. Cognitive dysfunction is a hallmark of the disease and the symptom most correlated with functional outcome. Here we describe a number of mechanisms by which estrogens may be therapeutic in schizophrenia, with a focus on cognitive symptoms. We review the relationship between estrogens and brain derived neurotrophic factor, neuroinflammation, NMDA receptors, GABA receptors, and luteinizing hormone. Exploring these pathways may enable novel treatments for schizophrenia and a greater understanding of this devastating disease.

Key Words: schizophrenia, estrogen, cognitive deficits, neuroprotection, NMDA receptor hypofunction, GABA, neuroinflammation, luteinizing hormone, BDNF

Highlights

- Sex differences in schizophrenia indicate that estrogens play a protective role
- Cognitive dysfunction is correlated to functional outcome
- Treatment with estrogens may improve cognitive symptoms
- Potential sites of action include NMDA receptors, GABA receptors, inflammation, BDNF, and LH

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Contents

Cognitive Dysfunction in Schizophrenia
Methods
Sex Differences in Schizophrenia
Estrogens and Schizophrenia
Estrogens, Cognition, and Schizophrenia

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