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Effects of chronic mild stress induced from peripuberty on sexual behavior in male rats, with or without escitalopram treatment

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Abstract

Background: After the Coronavirus Disease pandemic, depression became more present, including in adolescents. Escitalopram, a selective serotonin reuptake inhibitor, was approved in 2009 for treatment of the major depressive disorder, both in children and adolescents. The undesirable effects of antidepressants on sexual dysfunction are usually underestimated.

Aims: To investigate the effects of chronic mild stress, induced from peripuberty up to adulthood, on male sexual behavior parameters, with or without the escitalopram treatment, using rats as experimental model in a translational study.

Materials and methods: Forty-four peripubertal male rats were distributed into four groups: Sham control, escitalopram, stress, and stress + escitalopram. The chronic mild stress consisted of nine different stressors randomly applied one per day, for 8 weeks (from 41 to 97 days postpartum). Escitalopram therapy by gavage (10 mg/kg) started at 70 days postpartum and lasted for 4 weeks. The male sexual behavior parameters were evaluated at 114 days postpartum. After that, euthanasia was performed for blood and testis collection. Histopathology of the testes and plasmatic testosterone level were carried out.

Results: There was a reduction in sexual activity and motivation in rats exposed to the stress protocol, which were treated or not with escitalopram, as well as an increase in the total number of mounts in animals exposed to the stress and treated with escitalopram. The testosterone levels were lower in animals exposed to the stress, which were or not treated with escitalopram (stress and stress + escitalopram). The frequency of histologically normal seminiferous tubule sections was lower in animals that were exposed to the stress and/or received escitalopram (escitalopram, stress, and stress + escitalopram).

Conclusion: Chronic mild stress induced from peripuberty, associated or not to escitalopram treatment, altered the testosterone levels and testicular histoarchitecture and seems to be related to the reduction in male sexual motivation.

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