

P-486 - COMPARISON OF ACUTE AND CHRONIC EFFECT OF ESCITALOPRAM ON REM SLEEP IN RATS

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Introduction: There is a marked overlap between the neuronal pathways involved in sleep/wake regulation and depression. Both the structure and the organization of sleep are altered in depressed patients; they enter the rapid eye movement (REM) sleep earlier, the amount of REM is increased and also the non-REM sleep is reduced in the first sleep cycle.

Serotonin reuptake inhibitor antidepressants (SSRIs) exert their therapeutic effect on the serotonergic system, which has a central role in the modulation of mood and vigilance.

Aims: The aim of this study was to investigate the acute and long-term effect of the SSRI escitalopram on REM sleep in rats.

Methods: The effect of a single (10 mg/kg i.p.) and chronically administered (10 mg/kg/day, released by an osmotic mini pump for 21-day-long) escitalopram was studied in male Wistar rats. Electroencephalogram, electromyogram and motility were recorded for three hours starting at light onset.

Results: The acutely administered escitalopram significantly reduced the time spent in REM sleep in the first three hours, compared to control. However, this REM-reducing effect was abolished after chronic administration.

Conclusion: There was a clear difference in the effect of escitalopram on REM sleep following acute and chronic administration, providing evidence for the adaptive changes of serotonin receptors, which take several weeks to evolve, and considered to have a role in the development of therapeutic effect of SSRIs in the treatment of depression.

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