Treatment with olanzapine, fluoxetine and olanzapine/fluoxetine alters citrate synthase activity in rat brain.


Source

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Abstract

A growing body of evidence has indicated that energy metabolism impairment may be involved in pathophysiology of some neuropsychiatric disorders. In this study, we evaluated the effect of acute and chronic administration of fluoxetine, olanzapine and the combination of fluoxetine/olanzapine on citrate synthase activity in brain of rats. For acute treatment, Wistar rats received one single injection of olanzapine (3 or 6mg/kg) and/or fluoxetine (12.5 or 25mg/kg). For chronic treatment, rats received daily injections of olanzapine (3 or 6mg/kg) and/or fluoxetine (12.5 or 25mg/kg) for 28 days. In the present study we observed that acute administration of olanzapine inhibited citrate synthase activity in cerebellum and prefrontal cortex. The acute administration of olanzapine increased citrate synthase activity in prefrontal cortex, hippocampus and striatum and fluoxetine increased citrate synthase activity in striatum. Olanzapine 3mg/kg and fluoxetine 12.5mg/kg in combination increased citrate synthase activity in prefrontal cortex, hippocampus and striatum. In the chronic treatment we did not observed any effect on citrate synthase activity. Our results showed that olanzapine and fluoxetine increased citrate synthase activity after acute, but not chronic treatment.

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