Participation of adenosine system in the ketamine-induced motor activity in mice

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Abstract:
The influence of adenosine receptor ligands on ketamine-induced locomotor activity was studied in mice. Ketamine-induced hyperactivity (10 mg/kg) was significantly and dose-dependently attenuated by CGS 21680 (selective A1 receptor agonist), and NECA (A1/A2 adenosine receptor agonist), but not by CPA (cyclopentyladenosine, selective A1 adenosine receptor agonist). Motor activity produced by subthreshold dose (2.5 mg/kg) of ketamine was significantly increased by DMPX (selective A2a receptor antagonist) and caffeine (A1/A2 adenosine receptor antagonist), but not by DPCPX (selective A1 adenosine receptor antagonist). These results suggest that adenosinergic system is involved in ketamine-induced motor activity and seem to indicate a predominant role of A2a adenosine receptor in this effect.

Key words:
ketamine, adenosine, motor activity, mice