Effort-related Effects of Atypical Dopamine Transport Inhibitors: Implications for Treating Motivational Dysfunctions in Depression

September 2

Tuesday, 12:30 pm

Billings Building—Rosedale Room

SPEAKER:

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Board of Trustees Distinguished Professor

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Host: Amanda Bernstein, MRes
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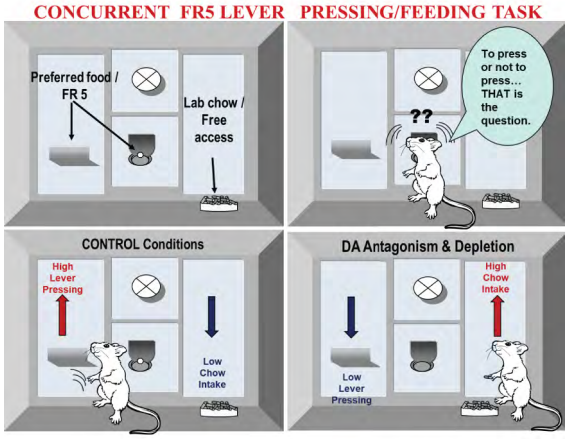
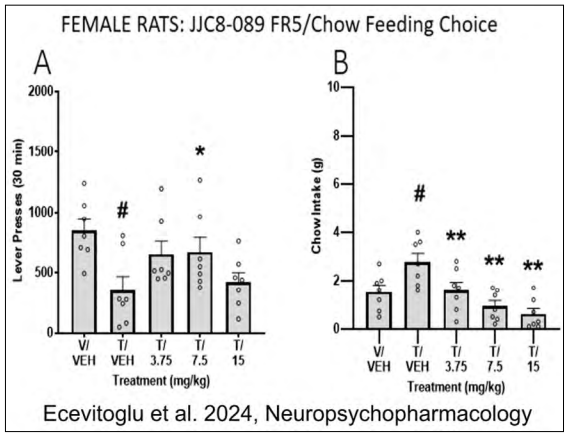
Abstract

Research abstract: Depression is not only a disorder of affect. It also is characterized by debilitating motivational impairments marked by psychomotor slowing, anergia, fatigue, and reduced exertion of effort. The most commonly prescribed antidepressants are serotonin transport (SERT) inhibitors such as Prozac, which are useful for treating mood and anxiety-related symptoms, but are relatively poor at treating motivational dysfunctions. A combination of clinical and preclinical evidence indicates that enhancing dopamine transmission can enhance the exertion of physical effort and have positive effects on motivational symptoms. Drugs that block the dopamine transporter (DAT) and elevate dopamine transmission can reverse the low-effort bias induced by pharmacological or inflammatory conditions in animal models. But not all DAT inhibitors have the same binding characteristics as cocaine or amphetamines. Atypical DAT inhibitors are being investigated for their potential use as treatments for motivational dysfunction. It is possible that novel atypical drugs that inhibit DAT but are not classical psychomotor stimulants could be useful for treating effort-based motivational symptoms in depression and other disorders.





Ecevitoglu et al. 2024, Neuropsychopharmacology

Publications

1. Salamone JD, Correa M (2024) The Neurobiology of Activational Aspects of Motivation: Exertion of Effort, Effort-Based Decision Making, and the Role of Dopamine. Annu Rev Psychol 75:1-32. doi: 10.1146/annurev-psych-020223-012208.

2. Ecevitoglu A, Meka N, Rotolo RA, Edelstein GA, Srinath S, Beard KR, Carratala-Ros C, Presby RE, Cao J, Okorom A, Newman AH, Correa M, Salamone JD (2024) Potential therapeutics for effort-related motivational dysfunction: assessing novel atypical dopamine transport inhibitors. Neuropsychopharmacology 49(8):1309-1317. doi: 10.1038/s41386-024-01826-1.

3. Ecevitoglu A, Beard KR, Srynath S, Edelstein GA, Olivares-Garcia R, Martinez-Verdu A, Meka N, Correa M, Salamone JD (2024) Pharmacological characterization of sex differences in the effects of dopaminergic drugs on effort-based decision making in rats. Psychopharmacology 241(10):2033-2044. doi: 10.1007/s00213-024-06615-8.

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