A preliminary report about the psychological effects of dopamine on people with the syndrome of Gilles de la Tourette. report about the psychological effects of dopamine on people with the syndrome of Gilles de la Tourette

Objectives: To compare and contrast the neuropsychological response to a dopamine agonist and a dopamine antagonist in adult participants with and without the syndrome of Gilles de la Tourette (TS) and with and without obsessive-compulsive disorder (OCD) during positron emission tomography (PET).

Methods: A dopamine agonist, a dopamine antagonist, and a substance with negligible effects on dopamine were administered to healthy adult participants and to participants with OCD, TS, and TS+OCD. Participants were told that they would receive a drug that may or may not have direct physical and psychological effects. Additionally healthy adult participants and to participants with OCD, TS-OCD, and TS+OCD received radiotracers for the dopamine and serotonin transporter and the serotonin receptor in minuscule amounts as controls procedures without any active pharmacological agents. Participants were told that they would not experience direct physical and psychological effects. All participants underwent serial evaluations for 85 minutes for stimulant effects, motor and phonic tics, and psychiatric symptoms and signs.

Participants received active drugs with marked pharmacological effects, (1) scans preceded by the intravenous injection of 0.3 mg/kg amphetamine, a dopamine agonist, and (2) scans during which a pharmacological dose of cold, nonradioactive raclopride, a dopamine antagonist, was administered intravenously in a mixture with radioactive [^{11}C]raclopride in a ratio of approximately 1000 parts nonradioactive to 1 part radioactive.

To estimate the greatest alteration in each item of each rating scale after the administration of a pharmacological challenge of an agonist or an antagonist of dopamine, we obtained a maximal effect variable for each rating as follows: Maximal effect variable for each rating tool = [(Maximal score with dopamine agonist or antagonist)-(Maximal score with saline)]/[Maximal score with saline] (Equation 1)

Results: Participants with OCD, TS, and TS+OCD exhibited stimulant effects to inert substances. All participants, including healthy participants and participants with OCD, exhibited movements when asked to lie still under experimental conditions for 90 minutes. People with TS had movement measurements twice those of people without TS.

Vocalizations were negligible in healthy participants and participants with OCD during all condition. Participants with TS and TS+OCD demonstrated phonic tics under all study conditions.

Healthy participants and participants with TS exhibited inconsistent alterations in psychiatric symptoms and signs after receiving raclopride, a dopamine antagonist. This is likely due to the small sample size.

Conclusion: While the participants with TS and TS+OCD demonstrated more movements than participants without OCD, the task of lying still in a scanner with intravenous and arterial lines and a face mask precipitates movements in all groups. Healthy adults as well as those with OCD and TS exhibit some movements when asked to lie still for 90 or 95 minutes in a scanner, with a face mask, and with arterial and venous lines.

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