The effects of THC on dopamine release.

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Inhalation of Delta9-THC will stimulate dopamine release in striatum and its sub-regions.

Ethische beoordeling	Positief advies
Status	Werving gestopt
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON24587

Bron
Nationaal Trial Register

Verkorte titel
THC-PET study

Aandoening

Positron Emission Tomography (PET), raclopride, Tetrahydrocannabinol (THC), cannabis, dopamine

Ondersteuning

Primaire sponsor: Department of Psychiatry
University Medical Center Utrecht

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

After inhalation of THC, dopamine release will be investigated using the [11C]raclopride displacement paradigm. Increase in striatal synaptic dopamine will be measured by the decline in D2 receptor availability to the binding of [11C]raclopride. This binding will be demonstrated using Positron Emission Tomography (PET).

Toelichting onderzoek

Achtergrond van het onderzoek

Background
Animal models demonstrate that the primary psychoactive ingredient of cannabis, Ä9-THC, is able to release dopamine in the striatum, which is part of the mesolimbic dopamine system. It is well known that the functioning of this system is disturbed in both addiction and schizophrenia. However, human data concerning THC and dopamine release are limited. Therefore in this pilot study we will investigate the effects of THC on the human mesolimbic dopamine system.

Hypothesis
Inhalation of Ä9-THC will stimulate dopamine release in striatum and its sub-regions.

Design
This is a double-blind, randomized, placebo-controlled study. Seven healthy, mild cannabis users between 18 and 45 years old will receive placebo or 8 mg THC by means of a vaporizer on two separate occasions. Dopamine release will be investigated using the [11C]raclopride displacement paradigm: increase in striatal synaptic dopamine will be measured by the decline in D2 receptor availability to the binding of [11C]raclopride. This binding will be demonstrated using Positron Emission Tomography (PET).

Doel van het onderzoek

Inhalation of Delta9-THC will stimulate dopamine release in striatum and its sub-regions.

Onderzoeksproduct en/of interventie

Healthy subjects will inhale placebo or 8 mg of THC, the main psychoactive ingredient of cannabis, by means of a vaporizer.

Contactpersonen

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Wetenschappelijk

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Age between 18 and 45 years;
2. History of mild cannabis use for at least one year (<1/week and => 4/year);
3. History without further illicit drug use;
4. History without psychotic experiences after cannabis use;
5. Written informed consent of the subject.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Any clinical significant abnormality of any clinical laboratory test, including drug screening;
2. Impaired physical health evaluated by medical history, physical (including neurological) examination and screening laboratory tests;
3. Any major current psychiatric diagnosis on axis-1 of DSM-IV;
4. History of clinically significant psychiatric or neurological illness;
5. History of clinically significant psychiatric or neurological illness in first- or second-degree relatives;
6. History of alcohol and/or drug abuse (DSM-IV criteria);
7. Paranoid ideation or psychoticism on SCL-90;
8. Any subject who received any investigational medication within 90 days prior to the start of the study or who is scheduled to receive an investigational drugs;
9. The use of any medication within three weeks prior to the start of the study, except for paracetamol;
10. Positive HIV or Hepatitis B/C test;
11. Blood donation within 3 months before the first test day;
12. Hb must be => 8 mmol / liter (males) or => 7 mmol / liter (females);

13. Body Mass Index (B.M.I.) between 18 and 28 kg/m2;
14. Claustrophobia;
15. Metal objects in or around the body (braces, pacemaker, metal fragments);
16. Pregnancy and breast feeding;
17. Exposure to radioactivity leading to a yearly cumulative dose of 10 mSv or more.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Blindering:	Dubbelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving gestopt
(Verwachte) startdatum:	01-08-2006
Aantal proefpersonen:	7
Type:	Werkelijke startdatum

Ethische beoordeling

Positief advies

Datum:	15-06-2006
Soort:	Eerste indiening

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

Geen registraties gevonden.

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL645
NTR-old	NTR706
Ander register	: N/A
ISRCTN	ISRCTN61445818

Resultaten

Samenvatting resultaten
N/A