The influence of cocaine and cannabis on impulsivity.

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Acute challenges with cocaine and cannabis will induce two opposing dopaminergic states in the brain. Cocaine will stimulate dopamine release leading to hyperdopaminergia whereas cannabis will reduce central dopamine levels resulting in...

Ethische beoordeling	Niet van toepassing
Status	Werving nog niet gestart
Type aandoening	-
Onderzoekstype	Interventie onderzoek

Samenvatting

ID

NL-OMON25495

Bron
Nationaal Trial Register

Aandoening

cannabis
cocaine
impulsivity
impulsiviteit
genotypering
genotyping
dopamine
COMT
DBH

Ondersteuning

Primaire sponsor: ZonMW
Overige ondersteuning: ZonMW

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The influence of cocaine and cannabis on impulsivity modulated by COMT and DBH genotypes. Genotyping of DBH will be performed before inclusion, COMT after testing.

Toelichting onderzoek

Achtergrond van het onderzoek

Genetic variations may affect drug induced changes in impulsivity and vulnerability to drug abuse. Two prime genes linking loss of impulse control, prefrontal dopamine (DA) and drug addiction are catechol O-methyltransferase (COMT) and dopamine beta-hydroxylase (DBH). Yet, the precise role of genetic variations on prefrontal DA and vulnerability to drug abuse is largely unknown. The current research proposal is designed to assess the influence of cocaine and cannabis on impulse control and to define the modulating role of the COMT and DBH genotypes on prefrontal DA and impulsive behaviours in cannabis and cocaine abusers. The research program consists of two major studies in regular users of cannabis and cocaine (N=60 in both studies) that will be conducted in parallel at Maastricht University and Radboud University Nijmegen Medical Centre. In each study, subjects will receive single doses of placebo, a THC dose of maximal 20mg and cocaine HCl 300mg according to a double blind, cross-over design. Impulsivity will be assessed objectively after administration of cannabis and cocaine with several performance models of impulse control (e.g. stop signal task, Cued Go/NoGo task) as well as with event related potentials and fMRI. Performance data will be analyzed separately for each centre but also combined in a meta-analysis over 120 subjects. It is expected that acute challenges with cocaine and cannabis will induce two opposing dopaminergic states in the brain. That is, cocaine will stimulate dopamine release leading to hyperdopaminergia whereas cannabis will reduce central dopamine levels resulting in hypodopaminergia. At present the common assumption is that a state of hypodopaminergia will lead to an increase in impulsive and risky behaviours such as drug use. Yet, the present studies are expected to demonstrate that drug induced impulsive behaviours can occur during both dopaminergic states depending on COMT and DBH genotypes and type of drug.

Doel van het onderzoek

Acute challenges with cocaine and cannabis will induce two opposing dopaminergic states in the brain. Cocaine will stimulate dopamine release leading to hyperdopaminergia whereas cannabis will reduce central dopamine levels resulting in hypodopaminergia. Drug induced impulsive behaviours can occur during both dopaminergic states depending on COMT and DBH genotypes and type of drug.

Onderzoeksopzet

Timepoint: 1 day.

Onderzoeksproduct en/of interventie

1. Cocaine HCl 300mg as capsule;

2. Cannabis 20mg by inhalation;

3. Placebo.

Contactpersonen

Publiek

Postbus 616
J. Wel, van
Maastricht 6200 MD
The Netherlands

Wetenschappelijk

Postbus 616
J. Wel, van
Maastricht 6200 MD
The Netherlands

Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen (Inclusiecriteria)

1. Regular use of cannabis and cocaine;

2. Good physical and mental health;

3. Body weight between 80 and 130% of the ideal bodyweight as defined in the Metropolitan Life Insurance tables;

4. Age 18-40.

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Pregnancy or lactation;

2. Cardiovascular abnormalities as assessed by standard ECG;

3. Excessive drinking;

4. Hypertension;

5. History of psychiatric and neurological disorders.

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Cross-over
Toewijzing:	N.v.t. / één studie arm
Blindering:	Dubbelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	01-01-2010
Aantal proefpersonen:	60
Type:	Verwachte startdatum

Ethische beoordeling

Niet van toepassing

Soort:	Niet van toepassing

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	NL2010
NTR-old	NTR2127
CCMO	NL29685.068.09
ISRCTN	ISRCTN wordt niet meer aangevraagd.

Resultaten

Samenvatting resultaten
N/A