The effect of cannabidiol (40mg) on fear conditioning

Published: 23-09-2014
Last updated: 21-04-2024

The properties of CBD, namely potential effects on variables pertaining to fear extinction and potentially on fear retention/reinstatement while having non of the problematic side-effects found in Δ9-THC, make CBD plausibly preferential...

Ethical review	Approved WMO
Status	Recruitment stopped
Health condition type	Anxiety disorders and symptoms
Study type	Interventional

Summary

ID

NL-OMON42213

Source
ToetsingOnline

Brief title
The effect of cannabidiol (40mg) on fear conditioning

Condition

- Anxiety disorders and symptoms

Synonym
anxiety disorders, pathological fear

Research involving
Human

Sponsors and support

Primary sponsor: Universiteit Utrecht
Source(s) of monetary or material Support: Ministerie van OC&W,NWO (Aspasia beurs)

Intervention

Keyword: cannabidiol, extinction, fear

Outcome measures

Primary outcome

Fear as reflected in the EMG and as reflected in answers on a VAS during a

passive VR navigation task (see protocol [C1] for details).

Secondary outcome

SCR (Skin conductance response)

Study description

Background summary

A sizable number of patients do not respond optimally to standard treatment, necessitating research for other potential therapeutic approaches to treating anxiety disorders. One such alternative may be targeting the cannabinoid system. Indeed, the endocannabinoid system has gained attention for its involvement in the regulation of fear and memory. Previous studies have shown that
Δ9-THC induces anxiolytic effects. However, the effect is dose dependent and results from our research group suggest that effects of Δ9-THC may not extend beyond acute symptom-attenuating effects. One other main constituent of cannabis, is cannabidiol which also affects the endocannabinoid system. Although the evidence is still rather scarce, one isolated study suggests that cannabidiol (CBD) may consolidate fear extinction in human subjects, which would have substantial implications for the treatment of anxiety related psychopathology.

Study objective

The properties of CBD, namely potential effects on variables pertaining to fear extinction and potentially on fear retention/reinstatement while having non of the problematic side-effects found in Δ9-THC, make CBD plausibly preferential over Δ9-THC (or preferential to a combination of Δ9-THC with CBD) in enhancing fear extinction and reducing fear retention/reinstatement. Indeed, if so, CBD may be an ideal candidate to aid exposure based treatment for anxiety disorders.

The specific objective in the current study is to assess the effect of CBD in facilitating fear extinction and attenuating fear retention and reinstatement as contrasted to placebo in a sample of healthy participants. Parameters pertaining to fear will be assessed by both subjective (questionnaires) as well as objective (electrophysiological) measures (EMG, SCR).

Study design

This study follows a between subjects, double blind, randomized, placebo controlled design.

Intervention

The primary intervention consists of one administration (via inhalation) of 40mg cannabidiol in an ethanol solution / placebo (solely ethanol).

Study burden and risks

The burden and risk involved in participating in this study is negligible to our opinion. Side-effects of CBD are minimal and CBD is well tolerated. The intensity of the electric schocks is determined on an individual level, and is well tolerated. Participation is
voluntary, and participants can withdraw from the study at any time, this will be clearly explained to participants.

Contacts

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Trial sites

Listed location countries

Netherlands

Eligibility criteria

Age
Adults (18-64 years)
Elderly (65 years and older)

Inclusion criteria

- Male or female volunteers between 18 and 40 years.
- Judged to be in good physical and mental health on the basis of the medical history according to self-report.
- Have a normal binocular acuity, corrected or uncorrected.
- Female participants must declare they are on reliable birth control.

Exclusion criteria

- Have a history of any disease, e.g. neurological disorders, psychiatric disorders, which in the opinion of the investigator may confound the results of the study.
- Present any other conditions in that in the investigators*, the subjects* personal or the physicians* opinion may confound the results of the study.
- History of psychotic disorder/psychosis and/or having a first/second degree family member with (a history of) psychotic disorder/psychosis.
- Current diagnosis of an Axis I or Axis II psychiatric disorder, or suffering from an Axis I or Axis II psychiatric disorder within 4 weeks prior to the study.
- Current respiratory disease or history of respiratory disease.
- Current asthma or history of asthma.
- Acute cardiac disease and/or history of cardiac disease.
- Known hypersensitivity to CBD.
- Exposed to cannabinoids with adverse reactions.
- Have a history of severe allergy or general drug hypersensitivity.
- History of abuse or current regular use of cannabis more than once a week.
- Have been using psychoactive drugs in the four weeks prior to the study.
- Current use of drugs of abuse or indications, from urine screening, of current use of drugs of abuse
- History of epilepsy.

- Pregnancy, i.e., a positive β-HCG urine test.
- Lactating.
- Reduced startle reactivity, defined as no discernable response in at least 3 out of the 12 startle stimuli presented at screening.

Study design

Design

Study type:	Interventional
Intervention model:	Parallel
Allocation:	Randomized controlled trial
Masking:	Double blinded (masking used)
Control:	Placebo
Primary purpose:	Other

Recruitment

NL

Recruitment status:	Recruitment stopped
Start date (anticipated):	21-09-2015
Enrollment:	48
Type:	Actual

Medical products/devices used

Product type:	Medicine
Brand name:	Cannabidiol
Generic name:	Cannabidiol

Ethics review

Approved WMO

Date:	23-09-2014
Application type:	First submission
Review commission:	METC NedMec

Approved WMO

Date:	08-09-2015
Application type:	First submission
Review commission:	METC NedMec

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
EudraCT	EUCTR2014-001721-32-NL
CCMO	NL49138.041.14