The effects of yohimbine on episodic memory retrieval and reconsolidation during EMDR

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The primary goal of the present research proposal is to investigate whether the stimulation of β-adrenergic stress hormone systems by α2-receptor antagonist yohimbine causes the common EMDR effects (i.e., reduced vividness) for...

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

Samenvatting

ID

NL-OMON26672

Bron
NTR

Verkorte titel
The role of β-adrenergic stress hormones in EMDR: a yohimbine investigation

Aandoening

Yohimbine, Emotional memory, EMDR, Eye movements, Noradrenalin, β-adrenergic stress hormones

Ondersteuning

Primaire sponsor: Utrecht University
Overige ondersteuning: Utrecht University

Onderzoeksproduct en/of interventie

Uitkomstmaten

Primaire uitkomstmaten

The emotionality and vividness of recollected memories at pretest (baseline), posttest (after medication intake and each experimental manipulation) and after 24 hour follow-up measured with HR, SC, a 4-minute memory recall task, a VAS for emotionality, and a VAS for vividness.

Toelichting onderzoek

Achtergrond van het onderzoek

Rationale

Eye Movement Desensitization and Reprocessing (EMDR) is a widely used, effective psychological treatment for posttraumatic stress disorder (PTSD). Its core intervention is that patients recall trauma memories while simultaneously making lateral eye movements. The working memory (WM) theory poses that recalling traumatic memories and making eye movements (EM) both tax working memory, which has limited capacity. Simultaneously performing both tasks leads to a competition for WM, rendering the traumatic memories less vivid and emotional. When memories are recollected they re-enter a labile state and become malleable and, because of this, the traumatic memory is overwritten by the memory that is blurred by EM.
Emotional material is better (re) consolidated than emotional neutral material. This prioritisation is caused by the release of β-adrenergic stress hormones, including noradrenaline (NA). Because in EMDR emotional material is recollected, NA release is expected. It is hypothesized here that EMDR might work because NA enhances the reconsolidation of the blurred emotional memories.

Objective

The primary goal of the present research proposal is to investigate whether β-adrenergic stress hormones play a role in the effectiveness of EMDR therapy. Recent studies by our group have shown that emotionally neutral memories cannot be blurred by EM. However, when arousal is added using a social stress task neutral memories suddenly become susceptible for memory blurring, suggesting emotional arousal and accompanying hormone release is a prerequisite for effectiveness of EMDR. While suggestive, these findings in itself do not tell whether or not β-adrenergic stress hormones are involved in the effects of EMDR. In the present study we seek to find out whether the stimulation of β-adrenergic stress hormones by yohimbine during the retrieval of neutral memories leads the common EMDR effects as observed for emotional memories (reduced vividness/emotionality) in order to find out if β-adrenergic stress hormone-release (evoked by the emotionality of the memories) plays an important role in the blurring of traumatic memories during EMDR. The results of the current study will help to elucidate the mode of action of a prominent psychological

intervention and may add to the WM-theory.

Study design

The study will use a double-blind, placebo-controlled, experimental, repeated measures design. Medication group (placebo, yohimbine) is the between subjects independent variable, condition (recall + EM, recall only, no recall) and time (pretest, posttest-1, posttest-2) are within subjects independent variables, and VAS-rated vividness and number of memory details are the dependent variables.

Study population

Sixty healthy participants (age 18-35) will be recruited at Utrecht University via flyers and advertisements and the online participant system.

Intervention

Half of the participants will receive 20 mg yohimbine HCL and half will receive a placebo. Of the three memories participants will have to retrieve, one will be recalled while making EM, one without EM and one will not be retrieved.

Main study parameters/endpoints

The vividness and number of details of recollected memories at pretest (baseline), posttest (after medication intake and each experimental manipulation) and after 24 hour follow-up measured a VAS and a 4 minute memory recall test.

Nature and extent of the burden and risks associated with participation, benefit and group relatedness

This project encompasses a low risk study. The low dosage (20 mg) of yohimbine HCL has minimal side-effects (see SPC and IB for an overview), and serious adverse events are very unlikely. Participants are carefully screened for contraindicative conditions and medication use. Another burden for the subjects is that they have to invest some time (approximately 3 hours) in participating in the study. The burdens of the test can be justified by the clinical and scientific relevance of the study. Participants can withdraw at any time from the study.

Doel van het onderzoek

The primary goal of the present research proposal is to investigate whether the stimulation of β-adrenergic stress hormone systems by α2-receptor antagonist yohimbine causes the

common EMDR effects (i.e., reduced vividness) for emotionally neutral memories. This will serve to find out if β-adrenergic stress hormone release (evoked by the emotionality of memories) plays a role in the blurring of traumatic memories during EMDR.

Onderzoeksopzet

Direct post-test and 24h hour follow-up.

Onderzoeksproduct en/of interventie

1. Yohimbine 20mg or placebo;

2. Memory recall + eye movements, memory recall only, no recall.

Contactpersonen

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Deelname eisen

Belangrijkste voorwaarden om deel te mogen nemen

(Inclusiecriteria)

1. Passing the medical screening (blood pressure and heart rate examination and interview);

2. Age 18-50.

3. Written informed consent

4. Normal or corrected-to-normal vision

5. Body Mass Index (BMI) between 17.5 and 26

6. In females: the use of reliable contraceptives (birth control pills or a hormonal intrauterine device)

Belangrijkste redenen om niet deel te kunnen nemen (Exclusiecriteria)

1. Systolic blood pressure over 140 mmHg, diastolic over 90 mmHg, and heart rate >100 beats per minute (bpm)

2. Familiarity with mechanisms behind EMDR

3. Inability to adequately read or speak Dutch

4. Known sensitivity to yohimbine

5. Lifetime history of psychiatric disorder (depression, mania, psychosis, anxiety)

6. Lifetime history of neurological disease (attention/memory problems and disorders, epilepsy, convulsions)

7. Lifetime history of any cardiovascular problem, coronary insufficiency, congestive heart failure, heart block, bradycardia, myocardial infarction, hypotension, chronic obstructive pulmonary disease, bronchial asthma, renal disorders, liver disorders, uraemia, hyperthyroidism, acidosis

8. Early age cardiovascular problems in first degree family members

9. Fainting easily (can be indicative of cardiovascular problems)

10. Use of any contraindicative medication:

- Medication that decreases blood pressure, or cardiac contractility or conductivity

- Medication for migraine, dizziness, asthma, tuberculosis, psoriasis

- Medication that lowers blood sugar levels

- Anti-inflammatory painkillers

- Anti-depressives

- Anti-psychotics

- Anxiolytics

- Antacids

11. A score of ≥ 26 on the Anxiety Sensitivity Index (ASI) (Peterson & Reiss, 1992) (in order to eliminate individuals who might have difficulty with any temporary symptoms induced by the yohimbine manipulation).

Onderzoeksopzet

Opzet

Type:	Interventie onderzoek
Onderzoeksmodel:	Parallel
Toewijzing:	Gerandomiseerd
Blindering:	Dubbelblind
Controle:	Placebo

Deelname

Nederland

Status:	Werving nog niet gestart
(Verwachte) startdatum:	15-10-2015
Aantal proefpersonen:	60
Type:	Verwachte startdatum

Ethische beoordeling

Niet van toepassing

Soort: Niet van toepassing

Registraties

Opgevolgd door onderstaande (mogelijk meer actuele) registratie

ID: 45064
Bron: ToetsingOnline
Titel:

Andere (mogelijk minder actuele) registraties in dit register

Geen registraties gevonden.

In overige registers

Register	ID
NTR-new	NL4820
NTR-old	NTR5322
CCMO	NL46836.041.15
OMON	NL-OMON45064

Resultaten

Samenvatting resultaten
N/A