An investigation of the P3b evoked potential in psychopathy

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Ethical review	Approved WMO
Status	Recruiting
Health condition type	Psychiatric and behavioural symptoms NEC
Study type	Observational non invasive

Summary

ID

NL-OMON32893

Source
ToetsingOnline

Brief title
investigation of P3b in psychopathy

Condition

- Psychiatric and behavioural symptoms NEC

Synonym
psychopathy / Psychohathy Check List - Revised (PCL-R) score of at least 26

Research involving
Human

Sponsors and support

Primary sponsor: Universitair Medisch Centrum Sint Radboud
Source(s) of monetary or material Support: Ministerie van OC&W

Intervention

Keyword: attention, ERP, P300, psychopathy

Outcome measures

Primary outcome

-Parietal P300 (P3b)

-Accuracy (percentage errors)

-Reaction times

Secondary outcome

-Mini International Neuropsychiatric Interview (MINI)

-Structured clinical interview for DSM axis II disorders (SCID-II)

-Psychopathy Check List-Revised (PCL-R)

-Nederlandse Leestest voor Volwassenen (NLV)

-Barratt Impulsiveness Scale 11 (BIS-11)

-Behavioral Inhibition System / Behavioral Approach System (BIS/BAS) scales

-Dimensional Assessment of Personality Psychopathology - Basic Questionnaire

(DAPP-BQ)

Study description

Background summary

Psychopathy is a developmental disorder involving both an emotional dysfunction as well as antisocial behaviour. The treatment of psychopathy has been relatively ineffective, and increased understanding of this disorder is needed. The proposed study tries to contribute to this need. Psychopathic individuals show abnormalities in the amplitude of an evoked potential called the P3b. However, results have been mixed: several studies have found P3b decreases during oddball tasks in psychopathic individuals relative to controls. In contrast, one study did not find any differences in P3b amplitude, and one

study (Raine & Venables, 1988) even found enhanced P3b amplitudes in psychopathic individuals relative to controls during a continuous performance task (CPT). A recent meta-analysis (Gao & Raine, 2009) of P3 abnormalities in antisocial and psychopathic individuals suggested that these inconsistent results can be accounted for by differences in task complexity that either lead to loss of attention due to boredom, or an increased focussed attention due to sensation. However, this suggestion is supported by only one study and thus, this study requires replication. We propose to use a similar task as the one used by Raine and Venables (1988), more specifically, the AX-Continuous Performance Task (AX-CPT), to measure both behavioural and electrophysiological differences in performance between psychopathic and control individuals. Furthermore, it has been suggested that P3 abnormalities may be indicative of externalizing disorders in general, and not of psychopathy per se. Therefore we will attempt to account for personality dimensions, drug abuse, and impulsivity by controlling for these potential confounds. Results may contribute to an increased understanding of some of the abnormalities in psychopathy. An increased understanding of the abnormalities in psychopathy is needed for the development of future (therapeutical) interventions.

Study objective

We want to compare differences in height of focussed attention on an AX-CPT between psychopathic and control individuals. To determine the height of focussed attention, we will use measures of P3b, accuracy, and reaction times. In addition, we want to control for externalizing disorder by controlling for the variables personality pathology, impulsivity and history of drug abuse, in addition to age and IQ.

Study design

cross-sectional design with a patient group and a healthy control group matched on age, IQ, and sex.

Study burden and risks

Participation does not involve any risk for participants. Participants coöperate in two sessions. In the first session, participants have to fill in questionnaires and participate in a diagnostic interview. In the second session, the participants will participate in an attention task during which electroencephalogram (EEG) is recorded. Our understanding of underlying psychophysiological deficiencies in psychopathy may be increased by this study. A better understanding of deficiencies in psychopathy is needed for the development of future (therapeutic) interventions.

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

for patients: criminals with PCL-R score of at least 26, men, age 18-55
for controls: non-criminals, men, age and IQ matched to the patient group

Exclusion criteria

Neurological disorders, visual or auditory disorders, psychiatric disorders (other than those that will be investigated)

Study design

Design

Study type:	Observational non invasive
Intervention model:	Other
Allocation:	Non-randomized controlled trial
Masking:	Open (masking not used)

Primary purpose: Basic science

Recruitment

NL

Recruitment status:	Recruiting
Start date (anticipated):	04-03-2010
Enrollment:	40
Type:	Actual

Ethics review

Approved WMO

Date:	11-01-2010
Application type:	First submission
Review commission:	CMO regio Arnhem-Nijmegen (Nijmegen)

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
CCMO	NL30127.091.09