A Study of Concerta XL on reducing ADHD symptoms and behavioural problems in adult offenders with ADHD

Submission date	Recruitment status No longer recruiting	[X] Prospectively registered		
18/05/2016		[X] Protocol		
Registration date	Overall study status	Statistical analysis plan		
31/05/2016	Completed	[X] Results		
Last Edited	Condition category	Individual participant data		
20/09/2023	Mental and Behavioural Disorders			

Plain English summary of protocol

Background and study aims

Attention deficit hyperactivity disorder (ADHD) is a common disorder that affects behaviour. ADHD can present in a number of ways, but common symptoms include a short attention span, restlessness, hyperactivity and impulsiveness. These symptoms often overlap with and could be better explained by other common mental health disorders seen in offenders. A particular concern for children with ADHD is the high risk for developing antisocial behaviour during adolescence and young adulthood. Previous studies have shown that around 30% of adolescent and 26% of adult prisoners have ADHD. Currently, the drug methylphenidate is the first line treatment recommended for ADHD with severe impairment in the UK. Despite known effects of methylphenidate on ADHD symptoms, it is uncommon for offender mental health teams to diagnose and treat ADHD. The reason is uncertainty over the effects of methylphenidate on ADHD and behavioural outcomes in offender populations, where ADHD is often accompanied by conduct problems, substance abuse and stress related disorders. The aim of this study is to investigate the effects of methylphenidate in young male prisoners with ADHD.

Who can participate?

Male prisoners aged between 16 and 25 years with ADHD.

What does the study involve?

Participants are randomly allocated to one of two groups. Those in the first group are treated with a placebo (dummy pill) for eight weeks. Those in the second group are treated with methylphenidate for eight weeks. This involves gradually increasing the dose to find the best balance of symptom improvement against side effects for the first five weeks and then maintaining the dose for a further three weeks. At the start of the study and then after eight weeks, participants complete a number of questionnaires in order to find out if their ADHD symptoms, well-being and attitudes towards violence have changed. The prison officers and education staff also complete a questionnaire to find out if the prisoner's level of aggressive behaviour has changed.

What are the possible benefits and risks of participating?

Study participants may benefit from receiving the diagnosis of ADHD and treatment for the disorder, as all participants will be offered treatment once the 8 week trial is completed. Common side effects from medication such as appetite reduction and sleep disturbance are usually minor and reduce with time, but can lead to some participants withdrawing from treatment. Serious side effects are rarely reported in ADHD treatment trials and so are likely to be rare and unexpected.

Where is the study run from?

The study is run from King's College London and takes place in two prisons, one in England and one in Scotland (UK)

When is the study starting and how long is it expected to run for? May 2014 to August 2019

Who is funding the study?

This project is funded by the Efficacy and Mechanism Evaluation (EME) programme, a partnership between the Medical Research Council (MRC) (UK) and the National Institute for Health Research (UK). Janssen-Cilag Ltd. supplied Concerta XL

Who is the main contact? Professor Philip Asherson philip.asherson@kcl.ac.uk

Contact information

Type(s)

Scientific

Contact name

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Additional identifiers

EudraCT/CTIS number 2015-004271-78

IRAS number

ClinicalTrials.gov number

Nil known

Secondary identifying numbers

CPMS 30391

Study information

Scientific Title

Randomised controlled trial of the short term effects of OROS-methylphenidate on ADHD symptoms and behavioural outcomes in young male prisoners with attention deficit hyperactivity disorder

Acronym

CIAO-II

Study objectives

Current study hypothesis as of 22/01/2021:

The overall aim of the trial is to investigate the effects of Methylphenidate extended release (OROS MPH) in young male prisoners (age 16-25) meeting DSM-5 diagnostic criteria for ADHD.

Hypotheses:

- 1. OROS-MPH is better than placebo in reducing inattention and hyperactivity-impulsivity in young male prisoners meeting diagnostic criteria for DSM-5 ADHD
- 2. OROS-MPH is better than placebo at reducing secondary outcomes that are key indicators of behavioural and functional impairments used in the management of young prisoners in the UK (including emotional dysregulation, antisocial behaviour in the prison, violent attitudes)
- 3. Improvements in secondary behavioural outcomes due to OROS-methylphenidate are mediated by improvements in ADHD symptoms or emotional dysregulation

Previous study hypothesis:

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Hypotheses:

- 1. OROS-MPH is better than placebo in reducing inattention and hyperactivity-impulsivity in young male prisoners meeting diagnostic criteria for DSM-5 ADHD
- 2. OROS-MPH is better than placebo at reducing secondary outcomes that are key indicators of behavioural and functional impairments used in the management of young prisoners in the UK (including emotional dysregulation, antisocial behaviour in the prison, violent attitudes and the number of recorded positive Incentives and Earned Privileges)
- 3. Improvements in secondary behavioural outcomes due to OROS-methylphenidate are mediated by improvements in ADHD symptoms or emotional dysregulation

Ethics approval required

Old ethics approval format

Ethics approval(s)

Approved 31/05/2016, East of England – Essex Research Ethics Committee, ref: 16/EE/0117

Study design

Randomised; Interventional; Design type: Treatment, Screening, Diagnosis, Process of Care, Drug, Psychological & Behavioural

Primary study design

Interventional

Secondary study design

Randomised controlled trial

Study setting(s)

Other

Study type(s)

Treatment

Participant information sheet

Not available in web format, please use the contact details to request a patient information sheet

Health condition(s) or problem(s) studied

Current condition as of 22/01/2021:

Specialty: Mental Health, Primary sub-specialty: Learning disorders; UKCRC code/ Disease: Mental Health/ Behavioural and emotional disorders with onset usually occurring in childhood and adolescence, ADHD

Previous condition:

Specialty: Mental Health, Primary sub-specialty: Learning disorders; UKCRC code/ Disease: Mental Health/ Behavioural and emotional disorders with onset usually occurring in childhood and adolescence

Interventions

Current interventions as of 22/01/2021:

Participants will be randomised to receive 8-weeks treatment with either OROS-MPH or placebo, titrated over 5 weeks to balance ADHD symptom improvement against side effects and then maintained for a further 3 weeks. 200 participants will be recruited with 1:1 ratio of drug to placebo. Randomisation will be conducted by the King's CTU with blinding of both investigators and participants.

Randomisation will take place once informed and signed consent has been obtained, eligibility checks have been completed and before the treatment is started. We will use the King's Clinical Trials Unit's Independent Randomisation Service, ensuring reliability and credibility in the randomisation process. Random block sizes will be used to control the numbers of subjects allocated to each group, stratified by site and in a 1:1 drug-placebo ratio. Patient characteristics will not be taken into account in the randomisation process, but we expect a balanced ratio of cognitive ability, ADHD symptom severity and co-occurring psychosocial and mental health problems across the drug treatment and placebo groups.

Both active medication (Concerta XL 18 mg tablets) and matched placebo will be titrated weekly for 5 weeks and then kept at stable maintenance dose for 3 weeks. The maximum titrated dose

(or matching placebo) is as follows: Week 1 = 18 mg (1 tablet); Week 2 = 36 mg (2 tablets); Week 3 = 54 mg (3 tablets); Week 4 = 72 mg (4 tablets); Week 5 = 72 mg (4 tablets); Week 6 = 72 mg (4 tablets); Week 7 = 72mg (4 tablets); Week 8 = 72mg (4 tablets). Titration of dose is conducted by the study psychiatrist. Both the trial investigators and participants are blinded. The titration protocol is followed in the same way for both active medication (IMP) and placebo. Treatment will start at an initial dose of 18 mg (1 tablet) for 1 week, and be increased weekly in 18 mg increments to a maximum of 72 mg (4 tablets) (i.e. 18 mg (1 tablet), 36 mg (2 tablets), 54 mg (3 tablets) and 72 mg (4 tablets). Medication will be reduced by 18 mg (1 tablet) if there is a limiting adverse event, in which case there will be no further increase in medication for the duration of the trial. Medication may be provided either once or twice daily up to the maximum daily dose. Titration upwards will be stopped if all 18 ADHD symptoms are scored as negligible (score of 0 or 1 on the CAARS-O) or absent. Unacceptable levels of adverse effects on the lowest dose of 18mg might lead to a cessation of treatment in a few cases; if this occurs we will ask participants to remain in the trial for the remaining trial assessments.

Participants in both groups are followed up at eight weeks.

Previous interventions:

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Intervention Type

Drug

Phase

Phase IV

Drug/device/biological/vaccine name(s)

methylphenidate (Concerta XL)

Primary outcome measure

Current primary outcome measure as of 22/01/2021:

Level of ADHD symptoms measured on the investigator rated Connors Adult ADHD rating scale (CAARS-O) measured at baseline and after 8-weeks of treatment.

Previous primary outcome measure:

Level of ADHD symptoms measured on the investigator rated Connors Adult ADHD rating scale measured at baseline and after 8-weeks of treatment.

Secondary outcome measures

Current secondary outcome measures as of 22/01/2021:

- 1. Emotional dysregulation rated by the investigator and measured using the Wender-Reimherr Adult Attention Deficit Disorder Scale (WRAADDS) at baseline, 5, and 8 weeks
- 2. Critical incidents (adjudications) measured from prison records during the 8-week period before randomisation to the 8-week assessment
- 3. Aggressive behaviour rated by prison officer and education staff using the Modified Overt Aggression Scale (MOAS) at baseline and 8 weeks
- 4. Behaviour measured using behaviour report cards from prison staff (BRC-P) and education staff (BRC-E) at baseline and at week 8
- 5. Engagement in education, occupational, and rehabilitation programs measured from prison records during the 8-week period before randomisation to the 8-week assessment
- 6. Attitudes towards violence self-rated using the Maudsley Violence Questionnaire (MVQ) at baseline, week 5 and 8
- 7. Subjective well-being measured using the CORE Outcome Measure (CORE-M) at baseline and 8 weeks
- 8. Spontaneous mind wandering self-rated using the mind excessively wandering scale (MEWS) at baseline, 5, and 8 weeks
- 9. General psychopathology measured using the Brief Symptoms Inventory (BSI) at baseline, 5, and 8 weeks
- 10. Symptoms of irritability measured using the Affective Reactivity Index Self Report (ARI-S) at baseline, 5, and 8 weeks
- 11. Overall health measured using Clinical Global Impression (CGI) at baseline, 5, and 8 weeks

Previous secondary outcome measures:

- 1. Emotional dysregulation is rated by the investigator and measured on the Wender-Reimherr Adult ADHD Diagnostic Scale at baseline and 8 weeks
- 2. Number of negative Incentives and Earned Privileges (IEPs) and adjudications for antisocial behaviour and rule breaking reported in the prison records at baseline and 8 weeks
- 3. Aggressive behaviour is rated by prison officer and education staff using the Modified Overt Aggression Scale at baseline and 8 weeks
- 4. Number of positive incentive and earned privileges (IEPs) for positive engagement in education, occupational and rehabilitation programs recorded in the prison records at baseline

and 8 weeks

- 5. Attitudes towards violence are self-rated using the Maudsley Violence Questionnaire at baseline and 8 weeks
- 6. Subjective well-being is measured using the CORE Outcome Measure (CORE_OM) at baseline and 8 weeks

Overall study start date

21/05/2014

Completion date

27/08/2019

Eligibility

Key inclusion criteria

Current participant inclusion criteria as of 22/01/2021:

- 1. Male, aged between 16 and 25 years
- 2. English speaking
- 3. Able to provide informed consent (understand the information sheet and make an informed decision taking into account pros and cons of study participation)
- 4. Meet clinical diagnostic criteria for DSM-5 ADHD: 5 or more current symptoms of ADHD in either the inattentive or hyperactive-impulsive symptom domains; 6 or more symptoms of ADHD in either the inattentive or hyperactive/impulsive symptom domains before the age of 12 years; Where it is not possible to gain sufficient clinical information to score childhood symptoms of ADHD, the operational criteria will be adapted to include evidence of several ADHD symptoms with impairment starting before the age of 12 years, and 5 or more symptoms currently with moderate to severe impairment
- 5. Persistent trait like (non-episodic) course of symptoms
- 6. Impairments in two or more clinical or psychosocial domains and two or more settings from symptoms of ADHD
- 7. Onset of symptoms before the age of 12 years

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Participant type(s)

Patient

Age group

Adult

Lower age limit

16 Years

Upper age limit

25 Years

Sex

Male

Target number of participants

Planned Sample Size: 200; UK Sample Size: 200

Key exclusion criteria

Current participant exclusion criteria as of 22/01/2021:

- 1. Lack of capacity to give informed consent
- 2. Moderate or severe learning disability, defined as an IQ <60
- 3. Serious risk of violence to the researcher
- 4. Current major depression, psychosis, mania or hypomania
- 5. Past history of bipolar disorder or schizophrenia (such as those with a clear history of episodic mania/hypomania or psychosis unrelated to acute drug intoxication. Excluding chronic emotional dysregulation such as irritability, frustration, anger or emotional-mood instability)
- 6. Medical contraindications to the use of stimulants (e.g. glaucoma, hypertension, cardiovascular disease or structural heart problem)
- 7. Drug-seeking behaviour or craving (defined as drug-seeking behaviour that is unusually severe and likely to affect the titration protocol due to unusual and excessive demands for drugs; or where there is a current withdrawal syndrome from an addition disorder with drug dependency)
- 8. Taking contraindicated medication (e.g. Clonidine, Courmarins, Monoamine oxibase inhibitors, Moclobemide, Rasagline) during the four weeks prior to randomisation
- 9. Receiving any ADHD medication between consent for screening and randomisation

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- 7. Drug seeking behaviour or craving

Date of first enrolment

17/10/2016

Date of final enrolment

02/04/2019

Locations

Countries of recruitment

England

Scotland

United Kingdom

Study participating centre HMP YOI ISIS

Western Way London United Kingdom SE28 ONZ

Study participating centre HM YOI Polmont

Polmont Falkirk United Kingdom FK2 0AB

Sponsor information

Organisation

King's College London

Sponsor details

King's Health Partners Academic Health Science Centre Guy's Hospital London England United Kingdom SE1 9RT

Sponsor type

Hospital/treatment centre

ROR

https://ror.org/0220mzb33

Funder(s)

Funder type

Government

Funder Name

National Institute for Health Research

Alternative Name(s)

National Institute for Health Research, NIHR Research, NIHRresearch, NIHR - National Institute for Health Research, NIHR (The National Institute for Health and Care Research), NIHR

Funding Body Type

Government organisation

Funding Body Subtype

National government

Location

United Kingdom

Results and Publications

Publication and dissemination plan

- 1. Publication in the NIHR Journals Library for the EME program
- 2. Publication in prominent peer reviewed journals (e.g. Lancet, British Medical Journal, British Journal of Psychiatry
- 3. Press release
- 4. Reporting at national and international psychiatry and offender mental health meetings (e.g. RCPsych annual meeting, European Psychiatry Association, American Association of Child and Adolescent Psychiatry)
- 5. Reporting at regional training meetings for offender mental health teams
- 6. Reporting at prominent criminal justice meetings (e.g. Stockholm Criminology Symposium)
- 7. Workshops/regional meetings with police, probation and offender management teams
- 8. Dissemination to guideline development groups
- 9. Information leaflets for service users and presentation at user group meetings (e.g. the annual ADDISS conference)
- 10. Development of clinical training programs for ADHD in offender mental health
- 11. Meetings with local commissioning groups (e.g. commissioners for London Offender Mental Health) and service planners in Scotland (e.g. via the Forensic Mental Health Management Care Network)
- 12. Meetings with offender mental health care teams in prisons and community settings
- 13. Meetings with offender management units, probation and prison monitoring committees
- 14. Feedback to participants in Polmont and Isis informing them of the study outcomes and providing information on support for people with ADHD

Intention to publish date

01/06/2022

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request

IPD sharing plan summary

Available on request

Study outputs

Output type	Details protocol	Date created	Date added	Peer reviewed?	Patient-facing?
Protocol article		02/12/2019	04/12/2019	Yes	No
Basic results		24/09/2020	16/06/2022	No	No
HRA research summary			20/09/2023	No	No