North Central London
Joint Formulary Committee

Shared Care Guideline
Methylphenidate (immediate release and long acting), Lisdexamfetamine, Atomoxetine and Dexamfetamine for treatment of Adult Attention Deficit Hyperactivity Disorder (ADHD)

Dear GP

The information in the shared care guideline has been developed in consultation with Primary Care and it has been agreed that it is suitable for shared care.

Sharing of care assumes communication between the specialist, GP and patient. The intention to share care should be explained to the patient by the Specialist when treatment is initiated. It is important that patients are consulted about treatment and are in agreement with it.

Introduction

This document should provide sufficient information to enable you to make an informed decision regarding the clinical and legal responsibility for prescribing this drug.

Methylphenidate (immediate release and long acting), Lisdexamfetamine, Atomoxetine and Dexamfetamine for treatment of Adult ADHD

Progressing to a stable, optimal dose usually takes approximately 8-12 weeks. Once achieved, a shared care arrangement with you will be requested. It will clarify responsibilities between the specialist and general practitioner (GP) for managing the prescribing of methylphenidate (immediate release and long acting), lisdexamfetamine, atomoxetine and dexamfetamine such as:

1. Who will prescribe;
2. Who will monitor;
3. Any tests required (e.g. ECG), the exact names/nature of the tests, why they are needed, the frequency of testing, the location in which these will be carried out and action to be taken for any abnormal results
4. Which clinician will be responsible for receipt and review of the results;
5. Who will communicate any necessary changes in dose to the patient and the GP;

ADHD is a neurodevelopmental condition which manifests as cognitive and behavioural deficits. It is characterised by the core symptoms of hyperactivity, impulsivity and inattention. ADHD is thought to be a persistent condition. A diagnosis of adult ADHD should only be made by specialist psychiatrist or appropriately qualified healthcare professional with training and expertise in the diagnosis of adult ADHD.

Drug treatments for adults with ADHD should always form part of a comprehensive treatment programme that focuses on psychological, behavioural and educational or occupational needs.

Shared Care criteria

Drug treatments used for ADHD will be prescribed for the treatment of adults with a confirmed diagnosis of moderate to severe ADHD using DSM-V / ICD 10 criteria. Initial dose titration of the chosen medication will take place under the care of specialist mental health services. Once the patient has been titrated to maintenance dose and stable they will be given a further prescription for 28 days of their maintenance dose. On discharge from specialist services advice will be given in a letter to continue with treatment in primary care.

Shared care responsibilities

Specialist

Send a letter to the GP along with shared care criteria and transfer form requesting shared care for this patient. Dose and frequency to be decided by the hospital team.

1. Before initiating treatment, perform all necessary tests before starting treatment with medication including specialist ADHD assessment, medical assessment (including blood tests, BMI, pulse, BP and ECG where indicated), screen for substance and alcohol misuse. Communicate the results of these tests to the patient's GP.
2. Discuss the benefits and side effects of treatment with the patient. Provide the patient with a Patient Information Leaflet, explain it and ensure that the patient understands the reason for the treatment, and dosing regimen. Inform the patient that treatment is off-label, where applicable.
3. Initiate treatment and prescribe in accordance with NICE and locally agreed clinical guidelines until the GP formally agrees to share care. Patients will be seen in clinic prior to consideration of shared care
4. Discuss the shared care arrangement with the patient
5. Provide results of baseline tests and recommend frequency of monitoring to GP. The specialist must also explain what the recommended tests are, why they are needed and the location in which these tests will be carried out
6. Send a letter to the GP after each clinic attendance ensuring current dose, weight, and frequency of monitoring are stated
7. Inform GP of test results, actions to take in case of abnormal results, and advise the GP on when to adjust the dose, stop treatment, or consult with specialist
8. Evaluate adverse effects reported by GP or patient
9. Report adverse events to the MHRA (via yellow card scheme) and GP
10. Inform GP of patients who do not attend clinic appointments
11. GPs are able to obtain advice and support from the specialist.

General Practitioner

Complete transfer form and send back to h*ospital* confirming acceptance/ rejection of shared care for patient. If there are concerns about the treatment there should be liaison with the specialist to resolve concerns. If the GP is unable to agree to shared care, inform the Hospital team stating reasons within ***14 days*** of receipt of request. If no response is received with 14 days, the specialist will assume the GP has accepted shared care.

1. Monitor patient's overall health and well-being and offer follow up and monitoring of BP, Pulse, BMI, ECG as recommended by NICE for adults who take ADHD medication (see clinical monitoring section)
2. Prescribe the drug treatment as described (including the brand if Methylphenidate Slow Release being prescribed). The term "as directed" **SHOULD NOT** be used
3. Ensure that the patient understands the dosing

4. Ensure the patient understands that he/she must report the warning symptoms as listed under "adverse effects"
5. Ensure compatibility with concomitant medication
6. Monitor results at recommended frequencies as described under "clinical monitoring" and inform the Specialist if abnormal
7. Adjust the dose as advised by the specialist (where applicable) and counsel patient on any dose changes
8. Seek advice (over the phone or by requesting a review in the clinic) whenever there are concerns or questions about the patient's ongoing treatment with medication for ADHD.
9. Report any adverse events and non-compliance to the specialist, where appropriate
10. Stop treatment on advice of specialist or immediately if urgent need arises
11. Help in monitoring the progression of disease and inform the specialist team of any changes to medication
12. Report adverse events to the specialist and MHRA (See 'Adverse effects' section of document)
13. All requests for repeat prescriptions should be reviewed individually prior to issuing

Patient responsibility

1. Attend all hospital and GP appointments. If the patient does not attend their appointment they may be discharged from the service.
2. Take medicines as agreed
3. Report to the specialist or GP if he/she does not have a clear understanding of the treatment
4. Inform specialist or GP of any other medication being taken, including over-the-counter products
5. Report any adverse effects or warning symptoms to GP or specialist
6. Inform hospital and GP of any changes in address or telephone numbers

Clinical Commissioning Group

1. To provide feedback to Trusts via the Shared Care and Fact Sheet group.
2. To support GPs to make the decision whether or not to accept clinical responsibility for prescribing.
3. To support Trusts in the resolving issues that may arise as a result of shared care.

SUPPORTING INFORMATION

For further details refer to the manufacturer's Summary of Product Characteristics (SPC) www.medicines.org.uk and current BNF www.bnf.org/bnf

Indications

Currently most methylphenidate and all dexamfetamine preparations do not have UK marketing authorisation for use in adults with ADHD. Hence, the prescription of methylphenidate and dexamfetamine after the age of 18 years is 'off-label' (except Medikinet XL®, which is licensed for initiation in adults). Informed consent should be obtained and documented.

Atomoxetine and lisdexamfetamine are licensed for the treatment of ADHD in adult patients when the presence of the condition in childhood can be confirmed.

NICE guidance recommends medication as first choice in the treatment of adults with moderate / severe ADHD.

Dose and Administration

Refer to current SPC for most recent information www.medicines.org.uk

Drugs covered by the agreement	Brand	Action	Dosage
Methylphenidate Immediate Release	Ritalin, Equasym, Medikinet	CNS stimulant Schedule 2 *controlled drug*	5mg BD - TDS up to a max of 100mg/daily in divided doses
Methylphenidate Modified Release	a) Equasym XL b) Medikinet XL c) Concerta XL (branded-generics also include Xenidate XL, Matoride XL, Delmosart and Xaggitin). (**Prescribe by Brand.** Brands are not interchangeable due to differing immediate release and modified release components)	CNS stimulant Schedule 2 *controlled drug*	a) & b) 10mg once daily up to max of 100mg once daily c) 18mg once daily up to a max of 108mg once daily
Lisdexamfetamine ▼ (Alternative to dexamfetamine)	Elvanse	CNS stimulant Schedule 2 *controlled drug*	30mg once daily up to a max of 70mg once daily *(A lower dose of 20mg once a day can be prescribed if indicated)*
Dexamfetamine Sulphate	Amfexa	CNS stimulant Schedule 2 *controlled drug*	5mg BD up to a max of 60mg/daily in divided doses
Atomoxetine	Strattera	Selective Noradrenaline reuptake inhibitor (*not a controlled drug*)	Usual Maintenance dose - 80-100 mg daily (max dose 120mg daily)

Prescribing Schedule II Controlled Drugs

Methylphenidate, Lisdexamfetamine and Dexamfetamine (and all relevant formulations i.e Ritalin, Medikinet, Equasym, Concerta, Elvanse) are **schedule II controlled drugs (CD)** and hence subject to prescription requirements i.e. must be indelible, signed by the prescriber, be dated and specify the prescriber's address. The prescription must always state:

- Name and address of patient
- Form and strength of preparation (e.g. 20 mg capsules)
- Dose (e.g. 20 mg TDS) – A dose of 'as directed' cannot be used
- Total quantity or number of dose units in words **AND** figures e.g. 420 mg = Four Hundred and Twenty milligrams or Twenty One (21) capsules.

Advanced electronic signatures can be accepted for Schedule 2 and 3 Controlled Drugs where the Electronic Prescribing Service (EPS) is used.

A prescription is valid for 28 days from the date stated thereon. Prescriptions are limited to a supply of 30 days treatment; exceptionally to cover a justifiable clinical need and after consideration of any risk, a prescription can be issued for a longer period, but the reasons for the decision should be recorded on the patient's notes.

Appropriate communication must occur between the specialist team and GP to ensure no overlap in prescribing.

Refer to most recent BNF for further details

Adverse Effects

Possible adverse effects and what to do if they occur:

Adverse Effect	Frequency	GP Management
METHYLPHENIDATE		
Nervousness and insomnia	>10%	Review dose and/or omit afternoon/evening dose if using TDS regime - refer to specialist for advice.
Decreased appetite (weight decreased)	1-10%	Usually transient. Try taking medicine with food if it persists. Refer to specialist for advice if continues
Headache, drowsiness, dizziness	1-10%	Refer to specialist for advice if continues
Abdominal pain, diarrhoea, nausea & vomiting, dry mouth, dyspepsia	1-10%	Occurs at initiation. May be alleviated by concomitant food intake. Refer to specialist for advice if continues
Tachycardia, arrhythmia, palpitations, hypertension	1-10%	Monitor. Consider reducing or discontinuing the medication in light of clinical findings. Further investigations should be considered (including ECG, 24 hour BP and 24 hour ECG. Consider referral to cardiology/ specialist physician.
Tic, aggression, anxiety, irritability	1-10%	Consider discontinuing if tics develop. Refer back to specialist.
Drug induced psychosis (e.g. hallucinations, restlessness) depression, mood swings	< 1%	Consider discontinuing. Refer back to specialist.
LISDEXAMFETAMINE ▼		
Insomnia	>10%	Review dose - ensure taken in morning – refer to specialist for advise
Decreased appetite (weight decreased)	>10% (1-10%)	Usually transient. Try taking medicine with food if it persists. Refer to specialist for advice if continues

Headache, dry mouth	>10%	Refer to specialist for advice if continues
Anorexia, diarrhoea, upper abdominal pain, nausea	1-10%	May be alleviated by concomitant food intake. Refer to specialist for advice if continues
Anxiety, agitation, libido decreased, erectile dysfunction, dizziness, restlessness, tremor, irritability, fatigue, feeling jittery, hyperhidriosis	1-10%	Refer back to specialist.
Tachycardia, palpitations, blood pressure increased,	1-10%	Monitor. Consider reducing or discontinuing the medication in light of clinical findings. Further investigations should be considered (including ECG, 24 hour BP and 24 hour ECG). Consider referral to cardiology/ specialist physician.
Depression, tic, affect lability, dysphoria, euphoria, mania, dermatillomania, logorrhea, somnolence, dyskineasia	0.1-1%	Consider discontinuing if tics develop. Refer back to specialist.
Blurred vision, vomiting, urticaria, rash, pyrexia	0.1-1%	Consider discontinuing. Refer back to specialist.
Psychotic episodes, hallucination, aggression, seizure	Not known	Consider discontinuing. Refer back to specialist
DEXAMFETAMINE ▼		
Aggressive behaviour, anxiety, confusion, delirium, depression, euphoria, insomnia, irritability, tics, night tremors	Not stated	Reduce dose & ensure not given too near bedtime. Consider discontinuing if tics develop. Refer back to specialist.
Paranoia, psychosis	Not stated	Consider discontinuing. Refer back to specialist.
Palpitations, tachycardia, change in blood pressure, cardiomyopathy, chest pain.	Not stated	Monitor. Check pulse after every dose change. ECG if necessary. Consider reducing or discontinuing the medication in light of clinical findings. Further investigations should be considered (including ECG, 24 hour BP and 24 hour ECG). Consider referral to cardiology/ specialist physician.
ATOMOXETINE		
Appetite decreased, dry mouth, nausea (weight decreased)	>10%	Usually transient. Try taking medicine with food if it persists. Refer to specialist for advice if continues
Headache, somnolence, insomnia	>10%	Usually settles after 1st month of treatment. Refer to specialist for advice if continues
Increased BP and heart rate	>10%	Monitor. Consider discontinuing if clinically indicated. Refer back to ADHD specialist and cardiologist if indicated.
Abdominal pain, constipation, dyspepsia, flatulence, vomiting	1-10%	Usually settles after 1st month of treatment. Refer to specialist for advice if continues

Weight decrease	1-10%	Usually settles after initial weight loss
Palpitations, tachycardia	1-10%	Monitor. Consider discontinuing if clinically indicated. Refer back to ADHD specialist and cardiologist if indicated.
Libido decreased, sleep disorder, dizziness, sinus headache, tremor, fatigue, lethargy, agitation	1-10%	Refer back to specialist
Dysuria, urinary hesitation, urinary retention	1-10%	Refer back to specialist
Dysmenorrhoea, irregular menstruation, ejaculation disorder, erectile dysfunction, male genital pain	1-10%	Refer back to specialist
Suicide-related events, aggression, hostility and emotional lability,	0.1-1%	Consider discontinuing. Refer back to specialist
QT interval prolongation,	0.1-1%	Monitor. Consider reducing or discontinuing the medication in light of clinical findings. Further investigations should be considered (including ECG, 24 hour BP and 24 hour ECG). Consider referral to cardiology/ specialist physician
Liver toxicity, abnormal liver function tests, jaundice, hepatitis,	0.001-0.1%	Consider discontinuing. Refer back to specialist
seizure, psychosis (including hallucinations),	0.001-0.1%	Consider discontinuing. Refer back to specialist

Suspected adverse drug reactions should be reported to the MHRA using the Yellow Card Scheme at www.yellowcard.mhra.gov.uk . Refer to BNF for further details.

▼ *New licensed medicine that requires additional monitoring by the EMA. The MHRA asks that all suspected reactions (including those considered not to be serious) are reported through the Yellow Card Scheme. An adverse reaction should be reported even if it is not certain that the drug has caused it, or if the reaction is well recognised, or if other drugs have been given at the same time.*

Cautions

Methylphenidate: Co-existing cardiac disease or psychiatric disorder, anxiety/agitation/tension, tics or family history of Tourette syndrome[1] or other movement disorders, known drug dependence/history of drug dependence/alcoholism, epilepsy, pregnancy, breast feeding; avoid abrupt withdrawal.

Dexamfetamine / Lisdexamfetamine: Anorexia, mild hypertension, psychosis or bipolar disorder, renal impairment, history of epilepsy, tics or Tourette syndrome[1], known drug dependence/history of drug dependence/alcoholism, avoid abrupt withdrawal.

Atomoxetine: Cardiovascular disease, structural cardiac abnormalities, QT interval prolongation, psychosis/mania, history of seizures, aggressive behaviour/hostility/emotional lability, hepatic impairment, pregnancy and lactation.

For a full list of cautions, refer to the Summary of Product Characteristics.

[1] The caution of using methylphenidate in Tourette syndrome exists due to the possibility of the medication increasing motor tic frequency. Patients under the Tourette's service at NHNN will be monitored in clinic regularly every three months for any adverse effects. Therefore this caution does not preclude the continuation of prescribing methylphenidate in primary care for patients within this service.

Clinical Monitoring

Once a patient's prescription is taken over by their GP all necessary clinical monitoring will take place in Primary Care. The Adult ADHD service will offer specialist advice and review any patient whose medication was started in the clinic. Patients will need to be re-referred to the service if they have been discharged for more than one year.

If there is need for specialist advice / interventions for adult patients who may already have ADHD diagnosis / treatment which was established elsewhere a new referral to the service will be required.

Weight (all stimulants):
Record weight at least every 6 months. If significant weight loss is associated with drug treatment contact the service to consider changing or stopping treatment. Consider monitoring BMI of adults with ADHD if there has been weight change as a result of their treatment, and changing the medication if weight change persists.

Cardiac function and blood pressure (all stimulants and Atomoxetine)

- Monitor heart rate and blood pressure before and after each dose change, and at least every 6 months[1].

If a person taking ADHD medication has sustained resting tachycardia (more than 120 beats per minute), arrhythmia or systolic blood pressure greater than the 95th percentile (or a clinically significant increase) measured on 2 occasions, reduce their dose and refer them to a cardiology/specialist physician.

Atomoxetine

- Monitor for dysmenorrhoea, erectile dysfunction and ejaculatory dysfunction.
- Monitor for agitation, irritability, suicidal thinking and self-harming behaviour, and unusual changes in behaviour, particularly during the initial months of treatment, or after a dose change.
- Patients should be warned about the potential for: increased agitation, anxiety, suicidal thinking and self-harming behaviour especially during the first few weeks of treatment and liver damage in rare cases (usually presenting as abdominal pain, unexplained nausea, malaise, darkening of the urine or jaundice).

Seizures (stimulants and Atomoxetine)
If a person with ADHD develops new seizures or a worsening of existing seizures, review their ADHD medication and stop any medication that might be contributing to the seizures. After investigation, cautiously reintroduce ADHD medication if it is unlikely to be the cause of the seizures

Sleep
Monitor changes in sleep pattern (for example, with a sleep diary) and adjust medication accordingly. Review sleep hygiene. If sleep disturbance associated with drug treatment continues refer back to specialist.

Worsening behaviour (stimulants and Atomoxetine)
Monitor the behavioural response to medication, and if behaviour worsens adjust medication and refer to a psychiatrist to review the diagnosis. If psychotic or severe affective symptoms emerge review and consider discontinuing medication and refer to a psychiatrist for an assessment.

Stimulant diversion

Healthcare professionals or carers should monitor changes in the potential for stimulant misuse and diversion, which may come with changes in circumstances and age.

Contraindications

Methylphenidate: Severe depression, suicidal ideation, psychosis, anorexia nervosa, cardiovascular disease, severe hypertension, hyperthyroidism, glaucoma, concomitant use or use within 2 weeks of MAOI

Dexamfetamine/Lisdexamfetamine: Symptomatic cardiovascular disease, structural cardiac abnormalities, moderate or severe hypertension, advanced arteriosclerosis, concomitant use or use within 2 weeks of MAOI, history of drug/alcohol abuse, hyperthyroidism, glaucoma, hyperexcitability, agitated states, pregnancy and lactation.

Atomoxetine: Concomitant use or use within 2 weeks of MAOI, narrow-angle glaucoma, severe cardiovascular or cerebrovascular disorders, pheochromocytoma.

For a full list of contraindications, refer to the Summary of Product Characteristics.

Drug Interactions

- Adrenergic Neurone Blockers- methylphenidate antagonises hypotensive effect, lis/dexamfetamine antagonises hypotensive effect of guanethidine.
- Alcohol- Effects of methylphenidate possibly enhanced by alcohol.
- Analgesics- Increased risk of ventricular arrhythmias with concomitant use of atomoxetine and methadone. Possible increased risk of convulsions with concomitant use with tramadol.
- General Anaesthetics (GA)- Increased risk of hypertension when methylphenidate given with volatile liquid GA
- Anticoagulants- Methylphenidate possibly enhances anticoagulant effect of coumarins.
- Antidepressants- Risk of hypertensive crisis when methylphenidate/lis/dexamfetamine/atomoxetine given with MAOI/moclobemide. Methylphenidate possibly inhibits metabolism of SSRI's and TCA's. Metabolism of atomoxetine possibly inhibited by fluoxetine and paroxetine. Increased risk of convulsions with atomoxetine and antidepressants (including bupropion).
- Antipsychotics- lis/dexamfetamine possibly antagonises antipsychotic effects of chlorpromazine, methylphenidate possibly increases side effects of risperidone. Increased risk of ventricular arrhythmias when atomoxetine given with antipsychotics that prolong QT interval.
- Clonidine- Serious adverse events reported with concomitant use of methylphenidate and clonidine.
- H2 receptor blockers and antacids – faster release of total active substance for MR methylphenidate preparations.
- Increased risk of ventricular arrhythmias with concomitant use of atomoxetine and amiodarone, disopyramide, moxifloxacin, parenteral erythromycin, mefloquine, sotalol, diuretics (due to hypokalaemia).
- Parenteral salbutamol- Increased risk of cardiovascular side-effects when given with atomoxetine.

For a full list of drug interactions, refer to the Summary of Product Characteristics.

References

1. NICE guideline [NG87] 87; Attention Deficit Hyperactivity Disorder: diagnosis and management; March 2018. https://www.nice.org.uk/guidance/ng87
2. BNF – September 2018-2019
3. Summary of Product Characteristics http://www.medicines.org.uk
4. Camden & Islington NHS Foundation Trust, shared care guidelines for methylphenidate, dexamfetamine and atomoxetine for ADHD in adults, PHA43, July 2015
5. Barnet, Enfield and Haringey Mental Health Trust shared care guidelines for methylphenidate, dexamfetamine and atomoxetine for ADHD in adults, 2010 (Reviewed 2015)
6. MHRA. Drug Safety Update. January 2012. Available at: http://www.mhra.gov.uk/safetyinformation/drugsafetyupdate/CON140666

Contact Details

Camden & Islington NHS Foundation Trust

Adult ADHD Clinic St Pancras Hospital Neurodevelopmental Service (Adult ADHD and Adult ASD) London, NW1 0PE	Tel: 0203 317 7300 cim-tr.Adult-ADHD@nhs.net
Highgate Mental Health Centre, Pharmacy Department	Tel: 020 7561 4103

Barnet, Enfield and Haringey Mental Health NHS Trust

Adult ADHD Clinic Barnet Service Line Barnet, Enfield and Haringey Mental Health NHS Trust 2nd Floor, Dennis Scott Unit | Edgware Community Hospital | Edgware | HA8 0AD	Tel: 020 8702 5544

National Hospital for Neurology and Neurosurgery

The National Tourette's Syndrome Service Box 19, The National Hospital for Neurology and Neurosurgery Queen Square London WC1N 3BG	Tel: 0203 448 3524

This document represents only a brief summary and is as accurate as possible. Always refer to the Adult ADHD Clinic for further information.

Document Control		
Date	**Version**	**Action**
March 2018	V1	Share Care produced by Camden & Islington MH Trust and Barnet, Enfield & Haringey MH Trust Agreed by NCL Medicines Optimisation Network: 6 March 2018 Ratified by NCL Joint Formulary Committee: 19 March 2018
June 2018	V1.1	Replaced "CIFT MEH" with "C&I FT" (approved by Share Care Group Chair)
March 2019	V1.2	Monitoring section updated following NICE guidance Order of medications changed as lisdexamfetamine now considered first-line choice of therapy Tourette's clinic information added (as they review and prescribe medications for ADHD patients)
September 2020	V1.3	Updated to reflect licensing status of methylphenidate MR products

Adult ADHD transfer form: from Adult ADHD clinic to GP practice

Section A: to be completed by secondary care *Send to practice*

This document is to request the shared care pathway of your patient and comprises an agreement between the GP and named consultant.

Fix address label here (ensure includes NHS no.)	Clinic stamp *or give details below*

Department			
Clinic phone		Fax	
Consultant		Email	
Indication for prescription			
Drug prescribed			
Date	Drug started		Current dose
Relevant conditions			
Monitoring variations			
Date next blood test		Next disease review due in	months' time.

Section B: [Accept Shared Care] to be completed by practice *Send back **FAO referring consultant** above*

The above patient has been accepted into our shared care service.

Practice date for next blood test		Practice stamp or add details *below*
Signed / Designation		
Date		

Section B: [Reject Shared Care] to be completed by practice *Send back **FAO referring consultant** above*

The above patient has not been accepted into our shared care service.

Reason		Practice stamp or add details *below*
Signed / Designation		
Date		