Dexamfetamine Adult ADHD

Part of the shared care protocol for Adult ADHD
Traffic light classification - AMBER 1
Information sheet for Primary Care Prescribers

Licensed Indications

Attention Deficit Hyperactivity Disorder (ADHD) in adults who are under the care of a specialist (Consultant Psychiatrist or Non-Medical Prescriber specialising in ADHD) as part of a comprehensive treatment program[1]. Although the initiation of dexamfetamine is not licensed in adults but it is recommended by NICE as a treatment for adult ADHD[1].

Any patient groups to be excluded from shared care

- Treatment of ADHD in children and young people is covered by a separate shared care protocol.
- Adult patients who are not under the care of a specialist.

Therapeutic Summary

Amfetamines are non-catecholamine sympathomimetic amines with CNS stimulant activity. The mode of therapeutic action of amfetamine in ADHD is not fully established, however is thought to be due to its ability to block the reuptake of norepinephrine and dopamine into the presynaptic neuron and increase the release of these monoamines into the extra neuronal space.

Medicines Initiation

NICE guidance (2018), suggests dexamfetamine in adults whose ADHD symptoms are responding to lisdexamfetamine, but who can no longer tolerate the effect profile. Treatment with dexamfetamine should only be initiated by a specialist with expertise in ADHD following a comprehensive assessment and diagnosis[1]. It is recommended by NICE that prescribing and monitoring should be carried out under locally agreed shared care arrangements with primary care[1].

Products available

Dexamfetamine tablets (Amfexa) - 5mg, 10mg, 20mg. Cost x 30 tablets - £19.89, £39.78 and £79.56 respectively[2,3].

Dexamfetamine 5mg (generic tablets) – 5mg. Cost x 28 tablets £24.73[2,3].

Dexamfetamine 5mg/5mL oral solution is non-formulary.

Dexamfetamine is a Schedule 2 Controlled Drug (CD). As such, prescriptions must conform to specific prescription writing criteria and each prescription should be for no longer than 30 days treatment.

Dosages and route of administration[2,4]

- Initiation, titration and stabilisation of dose will be performed by the specialist.
- The recommended starting daily dose is 5 mg twice daily (e.g. at breakfast and lunch), increasing if necessary at weekly intervals according to tolerability and degree of efficacy observed.

- Maintenance doses should be given in 2-4 divided doses, maximum 60mg per day.
- N.B. Not licensed for use in adults for refractory attention deficit hyperactivity disorder.

The tablets may be swallowed whole with the aid of liquids, or alternatively, in cases of swallowing problems the tablets can be halved[2].

Duration of treatment
Following an adequate treatment response, treatment with medication for ADHD should be continued for as long as it remains clinically effective. This should be reviewed at least every 12 months by the specialist[1].

In adolescents whose symptoms persist into adulthood and who have shown clear benefit from treatment, treatment should be continued into adulthood[1].

Monitoring Requirements and Responsibilities
Pre-treatment/baseline assessments to be performed by the specialist and will include: Behavioural rating scales (e.g. SDQ, CAARS self and observer report), descriptive reports from partners/carers, medical history, assessment of mental health and social circumstances and review of physical health (including height, weight, baseline pulse and blood pressure)[1].

On-going monitoring
During dose titration and stabilisation, the appropriate monitoring will be performed by the specialist. When dexamfetamine is being prescribed under a shared care agreement, the ongoing monitoring specified will be performed by primary care and the results sent to the specialist for recording in the patient's notes.

On-going psychological response and assessment of continued need for dexamfetamine will be performed by the specialist at least every 12 months.

Ongoing monitoring[1,4]	**Frequency**[1]
Heart Rate and Blood Pressure	Baseline and six monthly. Also before and after each dose change. Refer to NICE guidelines for hypertension in adults[5]
Weight	Baseline then every 6 months. Consider BMI monitoring of adults with ADHD if there has been weight change as a result of their treatment.
Development or worsening of psychiatric disorders	Baseline and six monthly. Also before and after each dose change.
Development or worsening of tics	Baseline – collect family history and clinically evaluate for tics or Tourette's syndrome. Six monthly. Also before and after each dose change.
Medication related side-effects	At each visit.
Risk of diversion, misuse and abuse	At each visit.
ECG	Not recommended unless there is a clinical indication (e.g. family history of cardiomyopathy or cardiac illness or hypertension or concomitant treatment with a medication that may pose an increased cardiac risk).
Routine blood tests	Not recommend unless there is a clinical indication.

Explicit criteria for review and discontinuation of the medicine[1,4]

These recommendations do not replace the need for medical assessments that would be undertaken in response to these signs/symptoms. In any case of withholding/reducing doses, please discuss with the specialist and assess the need for a risk management plan and follow up appointments.

Sustained resting tachycardia (>120bpm)	Withhold/reduce dose and discuss with the specialist. Arrange an ECG, prompt cardiology input if indicated
Arrhythmia (suspected or confirmed)	Withhold/reduce dose if significant and discuss with the specialist. Prompt cardiology input if indicated.
A clinically significant increase in blood pressure (measured on 2 occasions)	Withhold/reduce dose if significant and discuss with specialist team. Prompt cardiology input if indicated.
Patient fails to attend for physical monitoring	Arrange a further appointment in a timely manner. If follow up appointments are not attended, do not provide further prescriptions and inform the specialist.
Tics	Stimulants have been reported to exacerbate motor and phonic tics and Tourette's syndrome. Discuss with the specialist if tics are new or significantly impairing function. Observation over a period of 3 months may be required before a clinical decision can be made. Dose reduction or switch to atomoxetine may be considered.
Insomnia	Monitor changes in sleep pattern (consider a sleep diary) and discuss with the specialist. May respond to dose reduction or timing adjustment.
Reduced appetite and / or clinically significant weight change	Discuss with the specialist. May respond to dose reduction or altered timing.
Development or worsening of psychiatric disorders (anxiety, agitation, depression, psychotic symptoms, mania, behaviour changes, suicidal tendencies)	Discuss with the specialist
Anaemia related symptoms (e.g. paleness, lethargy)	Seek medical attention, rarely related to dexamfetamine.
Abnormal bruising / bleeding / severe sore throat / skin lesions or severe infection	Seek immediate medical attention, rarely related to dexamfetamine.
Seizures in patients with no previous history	Consider urgent medical assessment. Withhold and discuss with the specialist.
Increase in seizure activity in patients with previous history of seizures	Withhold and discuss with the specialist.
Suspected drug misuse and diversion	Discuss with the specialist

For a full list of Side Effects refer to the BNF or Summary of Product Characteristics (SPC).

Contraindications[2,4]

- Advanced atherosclerosis, moderate or severe hypertension, symptomatic cardiovascular disease, known serious structural cardiac abnormalities, cardiomyopathy, life threatening arrhythmias, heart failure, angina and myocardial infarction

- Cerebrovascular disorders
- Hyperthyroidism or thyrotoxicosis
- Anorexia, agitated states, severe depression, psychosis, uncontrolled bipolar disorder, schizophrenia and suicidal tendencies. Co-morbidity with psychiatric disorders is common with ADHD. The manufacturer advises if new psychiatric symptoms develop or exacerbation of psychiatric disorder occurs, continue use only if benefits outweigh risks.
- Glaucoma
- Phaeochromocytoma
- Porphyria
- History of alcohol or drug abuse - the risk of drug abuse, misuse or diversion is greater for short acting stimulants than for corresponding longer acting products.
- Hypersensitivity to sympathomimetic amines or any excipients as listed in the SPC
- Concomitant use of MAOIs or within 14 days of MAOI treatment

Precautions[2,4]

- History of epilepsy
- Mild hypertension
- Susceptibility to angle-closure glaucoma
- Tics
- Tourette syndrome

There is no experience with the use of dexamfetamine in patients with renal or hepatic insufficiency. In those patients peak plasma levels could be higher and elimination could be prolonged.

Pregnancy and Breastfeeding

There is a limited amount of data from the use of dexamfetamine in pregnant women. Children of mothers who are dependent on amfetamine have been shown to be at an increased risk of premature birth and reduced birth weight. Results of studies in animals suggest that high doses of dexamfetamine may elicit reproductive toxicity; the use during pregnancy is not recommended[4].

If appropriate, female patients should be advised to use effective contraception during treatment with dexamfetamine. In the event of a female patient becoming pregnant whilst taking dexamfetamine, or wishing to start a family she should be advised to contact the specialist as soon as possible.

Amfetamines are excreted in breast milk and should not be used in those who are breastfeeding[4].

Driving

Patients must tell the DVLA if their ADHD or ADHD medication affects their ability to drive safely. Please refer to government advice on driving and psychiatric disorders[6].

Patients should be warned about the potential of dexamfetamine to affect their ability to drive as it is an offence to drive if impaired whilst taking it. When driving, patients should be advised to carry suitable evidence that the medicine was prescribed to treat a medical problem, and that it was taken according to the instructions given by the prescriber, or information provided with the medicine (e.g. a repeat prescription form or the medicine's patient information leaflet)[2].

Clinically relevant medicine interactions and their management[2,4]

- Monoamine Oxidase Inhibitors (MAOIs) including isocarboxazid, moclobemide, phenelzine and tranylcypromine - dexamfetamine should not be used in combination with MAOIs or within 2 weeks of stopping a MAOI due to risk of hypertensive crisis.
- Anticonvulsants: dexamfetamine may increase plasma levels of phenytoin and possibly primidone and phenobarbital.
- Coumarins: dexamfetamine may enhance the anticoagulant effect of warfarin. May require an increased frequency of INR monitoring.
- Dexamfetamine may enhance the effect of some antidepressants (SSRIs and tricyclics).
- Agents that may reduce the effects of dexamfetamine: chlorpromazine, haloperidol and lithium carbonate.
- Agents that acidify urine increase urine excretion and decrease the half-life of amfetamine include ascorbic acid and thiazide diuretics.
- Agents that alkalinise urine decrease urinary excretion and extend the half-life of amfetamine include sodium bicarbonate.
- Amfetamines may decrease the effectiveness of guanethidine or other antihypertensives.
- Amfetamines can cause a significant elevation in plasma corticosteroid levels. This increase is greatest in the evening.
- Serotonin syndrome has rarely occurred in association with the use of amfetamines when given in conjunction with serotonergic medications.

For a full list of contraindications, precautions and drug interactions refer to the BNF/product SPC.

Information Given to Patient

Written information sheets on the medicines used in ADHD can be found at the following sites:
http://www.choiceandmedication.org/nottinghamshirehealthcare/

http://www.rcpsych.ac.uk/mentalhealthinformation

References

1. Attention deficit hyperactivity disorder: Diagnosis and management. NICE Clinical Guideline 87 (March 2018) http://www.nice.co.uk/guidance/ng87.
2. Joint Formulary Committee. *British National Formulary* (online) London:BMJ Group and Pharmaceutical Press. https://www.medicinescomplete.com/mc/bnf/current/ [Accessed on 02/03/2021].
3. The Electronic Drug Tariff https://www.drugtariff.nhsbsa.nhs.uk/#/00798052-DC/DC00798043/Home [Accessed on 02/03/2021].
4. Amfexa 5mg,10mg and 20mg tablets – Flynn Pharma Ltd. Summary of product characteristics (last updated 25/04/2018) https://www.medicines.org.uk/emc/product/5004/spc [Accessed on 02/03/2021].
5. Hypertension in adults: diagnosis and management. NICE Clinical Guideline 136 (August 2019) https://www.nice.org.uk/guidance/ng136.
6. DVLA. Attention deficit hyperactivity disorder (ADHD) and driving. https://www.gov.uk/adhd-and-driving [Accessed on 02/03/2021].

Contacts

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1.0	Based on draft document developed by Dr B Houghton, Professor Chris Hollis and John Lawton. Reviewed and updated by: -**Dr Kiran Jeenkeri**, Consultant Psychiatrist and Clinical Director IDD Services, Nottinghamshire Healthcare NHS Foundation Trust -**Jackie Dziewanowska**, Neurodevelopmental Disorder Nurse Consultant and Neurodevelopmental Service Clinical Lead, Nottinghamshire Healthcare NHS Foundation Trust -**Hannah Godden**, Mental Health Interface and Efficiencies Pharmacist, Nottingham and Nottinghamshire CCGs/ Nottinghamshire Healthcare NHS Foundation Trust	March 2021	