NORTH ESSEX PARTNERSHIP UNIVERSITY NHS FOUNDATION TRUST

CONTINUING CARE GUIDELINES AND INFORMATION FOR SECONDARY CARE AND GENERAL PRACTITIONERS

MEDICATION FOR THE TREATMENT OF ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

Date of implementation November 2013 Date of review November 2016

SUMMARY

► Methylphenidate preparations are first-line treatments if medication is required.
► Lisdexamfetamine is second choice for children if methylphenidates or atomoxetine have been tried or if a soluble once-daily dosage is essential. (BLACK TRIANGLE REPORTING REQUIRED)
► Atomoxetine is an alternative, licensed for adults, and not a Controlled Drug.

1. Introduction

1.1 ADHD is thought to affect 2% adults worldwide. The NICE clinical guideline 72 September 2008 "Attention Deficit Hyperactivity Disorder" gives guidance on the diagnosis and management of ADHD in children, young people and adults.

1.2 Methylphenidate, Atomoxetine and Dexamfetamine were recommended at that time for the management of people with a diagnosis of ADHD. Methylphenidate is recommended as first line treatment for adults, although this is an unlicensed use. Lisdexamfetamine was introduced more recently with a limited licence for use for children over 6.

1.3 Treatment must be initiated by secondary care (paediatricians, community paediatricians, child psychiatrist, or adult psychiatrist)

1.4. Treatment of ADHD consists of a number of strategies and therapies, including non-drug therapies. These are outside the scope of this guidance. Please refer to the NICE CG72 for more information.

2. Indications for use

2.1 A diagnosis of ADHD by a secondary care professional, after a comprehensive assessment

2.2 Drug treatment is not recommended for pre-school children.

2.3. It should be considered for children and young people with moderate ADHD who have

- Moderate impairment where non-drug interventions have been refused
- Persisting significant impairment following non-drug treatments.

2.4. School-age children and young people with hyperkinetic disorder may be offered medication first-line.

2.5. Adults. Methylphenidate should be tried first (NICE recommendation).

3. Referral

3.1 Core symptoms include developmentally inappropriate levels of activity and impulsivity, and an impaired ability to sustain attention. Children and young people have difficulty in regulating their activities to conform to expected norms and as a result are unpopular with adults and peers. They often fail to achieve their potential, and many have co-morbid difficulties such as developmental delay, specific learning problems and other emotional and behavioural disorders. The symptoms of ADHD may persist into adolescence and adulthood, and may be associated with continuing emotional and social problems, unemployment, involvement in crime and substance misuse.

3.2. Before referral, check for other causes of hyperkinetic behaviour (for example, lack of sleep, b-stimulants for asthma, hearing, bereavement or trauma, child abuse, inadequate parenting, hyperthyroidism)

3.3. Patients should be referred if:

- The symptoms have persisted for at 10 weeks to a degree that is maladaptive and inconsistent with the developmental level of the child or the functioning of the young adult.
- There must be clear evidence of clinically significant impairment in social or academic functioning
- Some impairment is present in two or more settings (for example home or school)

3.4. Children or adolescents with other mental health disorders should be referred to the NEP Child and Adolescent Services.

3.5. For adults, if the symptoms are not consistent but always coincide with an episode of schizophrenia or other severe mental health disorder please refer to the appropriate mental health service or drug and alcohol services.

4. Secondary care assessment

4.1 Diagnosis should only be made by a secondary care psychiatrist, paediatrician or other healthcare professional with training and expertise in the diagnosis of ADHD.

4.2 Diagnosis should be based on a full clinical and psychosocial assessment, developmental and psychiatric history, and observer reports and an assessment of mental state.

4.3 Diagnosis should be made when the symptoms of hyperactivity/impulsivity and/or inattention

- Meet the criteria in DSMIV or ICD10(hyperkinetic disorder) AND
- Are associated with at least moderate psychological, social or educational or occupational impairment AND
- Are pervasive, occurring in at least two settings

4.4. It should include assessment of needs, other conditions, personal circumstances, physical health, and for children, assessment of the parent or carer's mental health.

4.5. Rating scales may be useful as adjuncts.

4.6. ADHD should be considered in all age groups

4.7. The views of children and young people should be taken into account when determining clinical significance.

4.8. The secondary care professional will confirm the above criteria before considering treatment with medication

5. Initiation and ongoing treatment by a secondary care service

5.1. Baseline and ongoing assessment including

- Diagnosis as above
- Full mental health and social assessment
- Full history and physical examination , including
  -history of exercise syncope, undue breathlessness, cardiovascular symptoms
  -heartrate and blood pressure monitoring
  -height and weight
  -family history of cardiovascular disease and examination of the CVS.
- An ECG if indicated from above or there is a history of sudden death in young family members
- Liver function tests for Atomoxetine
- Risk assessment for substance misuse and drug diversion.

5.2 Discussion with the patients and their families on the options available

5.3 For children and young people, obtaining consent to treatment. NEP children's service should use the appropriate forms.

5.4. Initiation of medication, with monitoring until the dose is stabilised.

5.5. Monitoring of height, weight, pulse and blood pressure, platelets, FBC, and LFT if clinically indicated at baseline, then height, weight, pulse and blood pressure after 3 months

5.6. Monitoring of height, weight, pulse and blood pressure every 6 months (children) or 12 months (adults) which will be notified to the prescribing GP.

5.7. Provision of written and verbal information about the medication to the patient and carers.

5.8. GP to be informed of initiation of medication and ongoing need for continuing care.

5.9. Medication should be discontinued after 1 month if ineffective or unsuitable.

5.10. When the treatment is stabilised (usually 3 months) a full summary of clinical details, the dose and frequency of the medication prescribed will be supplied to the GP before he/she prescribes/participates in the continuing care.

5.11. A named nurse or CAMHS team member will be provided for family/patient support for children or young people, or a care co-ordinator for adults.

5.12. An outpatient visit will be offered at least every 6 months for children, annually for adults.

5.13. The GP will be notified of the intention to gradually discontinue medication, and support will be provided during discontinuation.

6. Continuation of care by GP service (not above GMS contract)

6.1. Initial referral to secondary care, if not through a Special Educational Needs Co-ordinator (SENCO)

6.2. Prescribing of medication once it is stabilised or a clear plan is in place.

6.3. FBC and platelet counts if clinically indicated.

6.4. Liaison with the secondary care professional if there are problems with treatment (for example, adverse reactions, lack of response to treatment, lack of concordance, significant changes in home circumstances)

7. Discontinuation of medication

7.1. Discontinuation should be discussed and agreed by the patient, and for children and young people, also their family, the secondary care professional, and the GP.

7.2. It should be a gradual withdrawal planned by secondary care (except Atomoxetine)

7.3. Discontinuation will usually be considered periodically to assess the condition, and during or after puberty. The manufacturers of Concerta® and atomoxetine recommend annually.

7.4. If the medication has been stopped for any reason the GP must inform the secondary care service as soon as possible.

7.5. Observe for previously masked depression

8. Medication information:

Please refer to the SPCs for each product for full details at www.medicines.org.uk For short version see www.bnf.org

8.1. Methylphenidate is recommended as the first-line choice for both adults and children, if there are no other factors to consider.(for example, comorbidity, intolerance, inefficacy)

8.2. Modified release methylphenidate is usually most appropriate because it is less addictive, and has been used for a long time so there is good evidence of efficacy and known side effects. The brand must be specified. There is Concerta XL® and also two two-stage formulations, Equasym® and Medikinet®. Short-acting Methylphenidate and Dexamfetamine are the most addictive and most liable to abuse. Methylphenidate and Dexamphetamine may facilitate contact with drug abusers, or bullying in school, and these factors must be considered when selecting a treatment. Methylphenidate is not licensed for use for adults, but it is recommended by the NICE CG72.

8.3. Lisdexamfetamine may be considered for children over 6 years but only if Methylphenidate has been unsuccessful or inappropriate. Black triangle reporting is required.

8.2. Atomoxetine is licensed for adults, and it is not addictive.

8.3. Methylphenidate, Dexamfetamine and Lisdexamfetamine are controlled drugs and subject to full prescription writing requirements (see BNF P8).

8.4. Methylphenidate slow release (Concerta XL®) tablets

http://www.medicines.org.uk/emc/searchresults.aspx?term=concerta&searchtype=QuickSearch

Cautions: Psychiatric disorders, anxiety, agitation, tics or family history of tourettes syndrome, epilepsy, susceptibility to angle-closure glaucoma, pregnancy. Avoid abrupt withdrawal.

Contra indications : Children under 6 years, cardiovascular disease including severe hypertension, hyperexcitability or agitated states, hyperthyroidism, history of drug/alcohol dependence, glaucoma, severe depression, anorexia nervosa, psychotic symptoms, uncontrolled bipolar disorder, suicidal ideation, marked anxiety and tension, breastfeeding, phaeocromocytoma, vasculitis, cerebrovascular disorders.

Interactions: MAOIs taken within preceding 2 weeks (do not co-prescribe)

May reduce metabolism of coumarin anticoagulants, anticonvulsants, antidepressants, increasing their blood concentration.

General anaesthetics may cause a rise in blood pressure.

Alcohol will increase adverse effects and should be avoided.
Caution: May cause dizziness. Caution when driving, operating machinery, or other potentially hazardous activities.
Adverse effects: Commonly, Headache, loss of appetite, weight loss, insomnia, stomach ache, nausea, feeling weak, hypertension, somnolence, twitching, anxiety, depression, emotional lability, hostility, nervousness, possible effect on growth rate. See SPC.
Dose: CONCERTA XL® 18mg each morning, increased in weekly steps of 18mg if necessary, to maximum 54mg each morning.
Must be swallowed whole.

8.5. Equasym XL® capsules

http://www.medicines.org.uk/emc/searchresults.aspx?term=equasym&searchtype=QuickSearch

Methylphenidate 30%, Methylphenidate slow release 70%.
Contraindications, interactions cautions and adverse effects as above
Dose: 10mg each morning before breakfast, increasing weekly to max. 60mg daily.
Capsule can be opened and contents sprinkled onto 1 tablespoon of apple sauce, and used immediately. Do not crush or chew.

8.5. Medikinet XL® capsules

http://www.medicines.org.uk/emc/searchresults.aspx?term=medikinet+XL&searchtype=QuickSearch

Methylphenidate slow release 50% immediate release 50%
Contraindications, interactions cautions and adverse effects as above
Dose: 10mg each morning, increased to 40mg gradually if necessary.
Capsules can be opened and contents sprinkled onto apple sauce or yoghurt and used immediately, then followed with a drink of water or fluid. Do not crush or chew.

8.6. Methylphenidate (Ritalin® tablets, Medikinet® tablets)

http://www.medicines.org.uk/emc/medicine/19664/SPC/Medikinet+Tablets/
http://www.medicines.org.uk/emc/medicine/1316/SPC/Ritalin/

Contraindications, interactions as for methylphenidate slow release.
Cautions: In addition to above, chronic abuse of Methylphenidate can lead to marked tolerance and psychological dependence with varying degrees of abnormal behaviour and possibly frank psychotic episodes. History of seizure. Discontinue if seizures develop or increase in frequency.
A*dverse effects:* As above. Insomnia and nervousness may be reduced by using smaller doses or omitting doses in the afternoon or evening.
Dose: 5mg once or twice a day (breakfast and lunch), increasing the dose if necessary by 5-10mg per week
to 60mg daily in divided doses.

8.7. Lisdexamfetamine (Elvanse®) BLACK TRIANGLE ▼

http://www.medicines.org.uk/emc/searchresults.aspx?term=elvanse&searchtype=QuickSearch

Contra-indications: Symptomatic cardiovascular disease inc. moderate to severe hypertension and advanced arterioschlerosis, hyperexcitability or agitated states, hyperthyroidism.
Interactions: Some minor interactions (see SPC)
Cautions: As above. Monitor growth rate. Use with caution if there is renal impairment.
Adverse effects: As above

Dose: Adult over 18 years (unlicensed use) and child: 30mg once daily in the morning. If necessary increase weekly by 20mg to maximum 70mg daily. DISCONTINUE after one month if response is insufficient. Swallow whole or dissolve contents of capsule in a glass of water.

8.8. Dexamfetamine (Dexedrine™)

(Not on the eMC)

Contraindications as for Methylphenidate, except licensed for children aged 3 years and above.

Interactions: As above, and Propranolol, Lithium,Phenothiazines and Disulfiram may reduce the efficacy of Dexamfetamine. Use with Beta-blockers may precipitate hypertension. Absorption of some antiepileptic drugs may be delayed. Use with Haloperidol may cause dystonia. May reduce respiratory depressant effects and increase analgesic effects of Morphine.

Caution: As above, and impaired kidney function *Adverse effects:* As above

Dose: Children 3-5 years 2.5mg daily, increasing by 2.5mg weekly if necessary. Children over 6 years 5-10mg daily increasing by 5mg weekly if necessary. Maximum usually 20mg/day, occasionally 40mg/day for older children.

8.8. Atomoxetine (Strattera™) capsules

http://www.medicines.org.uk/emc/searchresults.aspx?term=strattera&searchtype=QuickSearch

Licensed for treatment of children over 6 years, adolescents and adults.

Contraindications: Glaucoma. Use not advised in pregnancy and breastfeeding due to lack of data.

Interactions: Do not use within 2 weeks of an MAOI

CYP2D6 inhibitors (for example Fluoxetine) may cause increase blood levels of Atomoxetine.

Salbutamol with Atomoxetine may be more cardiotoxic.

Drugs affecting noradrenaline may be potentiated or potentiate Atomoxetine.

Caution: Suicidal ideation.The patient should be monitored and parents/carers should be advised to observe for warning signs (irritability, agitation, worsening symptoms or unusual changes in behaviour) Risk of hepatic disorder.Patients and carers must be advised to seek medical attention in case of abdominal pain, unexplained nausea, malaise, darkening of the urine, or jaundice

History of seizure. Discontinue if seizures develop or increase in frequency.

QT prolongation.Use with caution particularly if used with other drugs that prolong Qt, cause electrolyte disturbance, or inhibit cytochrome P450 2D6

Patients with moderate hepatic insufficiency should start on 50% normal dose. May cause drowsiness. If affected do not drive or operate machinery.

Adverse effects: Abdominal pain, decreased appetite, anorexia, dry mouth, nausea, vomiting, dyspepsia, flatulence, constipation, palpitations, increased heartrate, increased blood pressure, postural hypotension, hot flushes, symptoms of flu, sleep disturbance, irritability, mood swings, lethargy , depression, anxiety, midriasis, dermatitis or rash.

In adults, decreased libido, increased sweating, difficulty in passing urine, prostatitis, menstrual problems. See SPC.
Dose: Children 6yrs and above, under 70Kg, 0.5mg/Kg daily in one morning dose, or two doses if necessary, increased weekly according to response and tolerability, up to 1.2mg/kg/day.
Children above 70Kg, adolescents and adults: 40mg daily, usually one dose in the morning, increasing weekly as necessary to 80mg daily. The BNF maximum dose is 100mg/day.

8.9. Antipsychotics should not be used to treat ADHD

9. Switching

To / From	Dexamphet. Or Methylphenidate	Methylphenidate Mod. Rel.	Atomoxetine
Dexamphet. or Methylphen		No crosstaper. 5mg TDS to 18mg OD 10mg TDS to 36mg OD 15mg TDS to 54mg OD	Crosstaper over 1-4 weeks
Methylphen Mod.rel.	No crosstaper Reverse of above right		Crosstaper over 1-4 weeks
Atomox.	No crosstaper	No crosstaper	
Stopping	Gradual	Gradual	Tapering not necessary

Lisdexamfetamine: Crosstaper only if switching to Atomoxetine, as above.

10. Current prices of medication (November 2013)

Medication	Strength	Price/month
Atomoxetine	10mg	£62.46 (28 capsules)
	18mg	£62.46
	25mg	£62.46
	40mg	£62.46
	60mg	£62.46
	80mg	£83.28
	100mg	£83.28
Dexamfetamine	5mg	£18.90 (28 tablets)
Lisdexamfetamine mesilate	30mg	£58.24 (28 capsules)
	50mg	£68.70
	70mg	£83.16
Methylphenidate “ Ritalin brand Methylphenidate	5mg 10mg 10mg 20mg	£3.03 (30 tablets) £5.49 (30 tablets) £5.57 (30 tablets) £10.92 (30 tablets)
Concerta XL® Methylphenidate MR Equasym XL® Methylphenidate MR	18mg 27mg 36mg 10mg 20mg 30mg	£31.19 (30 tablets) £36.81 (30 tablets) £42.45 (30 tablets) £25.00 (30 capsules) £30.00 (30 capsules) £35.00 (30 capsules)
Medikinet XL®	5mg 10mg 20mg 30mg 40mg	£24.04 30 capsules £24.04 (30 capsules) £28.86 (30 capsules) £33.66 (30 capsules) £57.72 (30 capsules)

11. Secondary care services in North Essex

West Essex CAMHS

Dr J Handysides, Dr A Bhardwaj Harlow CAMHS, Reunion House, Harlow CM20 1QR 01279 637 000

Dr L. Bailly, Loughton CAMHS, Whitehills Rd, Loughton IG10 1TS 020 8271 4100

Dr Rudran Viji Jo Jenkins Pharmaceutical Advisor - HCTHerts and Essex Hospital Bishops Stortford CM23 5JH Tel: 01279 827230

North East Essex

Dr T Jareonsettasin, Colchester CAMHS Holmer Court, Essex St, Colchester CO3 3BT 01206 287 212

Dr H Mahadevappa, Tendring CAMHS, Beech House, 32 Thoroughgood Rd Clacton CO15 6DD 01255 207070

Mid Essex

CAMHS, C&E Centre, New London Road, Chelmsford Tel. 01245 315100

Dr A Anfield

Dr Zorilla Garcia

Dr C Lyder

Central Essex Community Services paediatric team

Dr G Kugan and Dr A Band

Moulsham Grange Children's Centre, Moulsham Street, CHELMSFORD, CM2 9AH Tel. 1-01245 546300

12. Advice and useful information

NICE CG72 Attention Deficit Hyperactivity Disorder Diagnosis and management of ADHD in children, young people and adults September 2008 http://publications.nice.org.uk/attention-deficit-hyperactivity-disorder-cg72

NICE TA March 2006 http://publications.nice.org.uk/methylphenidate-atomoxetine-and-dexamfetamine-for-attention-deficit-hyperactivity-disorder-adhd-ta98

ABPI medicines compendium for SPCs www.medicines.org.uk

www.bnf.org for most recent hard copy BNF

Maudsley Guidelines 9th Edition

www.choiceandmedication.org.uk/nepft for patient leaflets and comparisons of treatment.

Nice reference for Lisdexamfetamine

http://www.nice.org.uk/mpc/evidencesummariesnewmedicines/ESNM19.jsp

SMC reference for lisdexamfetamine

http://www.scottishmedicines.org.uk/SMC_Advice/Advice/863_13_lisdexamfetamine_dimesylate_Elvanse/Briefing_Note_lisdexamfetamine_dimesylate_Elvanse

NEP Pharmacy 01245 315 500

Medicines information Harlow PAH 01279 82 7054

MI Colchester General 01206 74 2161

MI Broomfield Hospital 01245 51 4822

13. Authors

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In consultation with the paediatricians, the PCOs and the acute trusts in North Essex.