SHARED CARE GUIDELINES FOR PRESCRIBING DEXAMFETAMINE IN THE MANAGEMENT OF HYPERKINETIC STATES IN CHILDREN

INDICATION

Dexamfetamine is a symphathomimetic amine and acts as a central nervous system stimulant and an anorectic. Its principal indication is in narcolepsy and is also one of the options for treatment in children with refractory hyperkinetic states, such as ADHD, under the supervision of a physician specialising in child psychiatry as part of a comprehensive treatment programme.

In ADHD, dexamfetamine should only be prescribed as an alternative for children who are unresponsive to other drugs (methylphenidate or atomoxetine) and have severe persistent symptoms and when the diagnosis has been confirmed by a specialist. Treatment often will need to be continued into adolescence and possibly adulthood.

The NICE clinical guideline for attention deficit hyperactivity disorder (CG no. 72) states that drug treatment:

- should only be started by a healthcare professional with expertise in ADHD
- be based on a comprehensive assessment
- always form part of a comprehensive treatment plan that includes psychological, behavioural and educational advice and interventions.
- may be prescribed and monitored by GPs under shared care arrangements

The NICE guideline states that a pre-drug treatment assessment should be completed, including:

- A full mental health and social assessment,
- A full history and physical examination, including:
    - Assessment of history of exercise syncope, undue breathlessness and other cardiovascular symptoms,
    - Heart rate and blood pressure (plot on a centile chart)
    - Height and weight (plot on a growth chart)
    - Family history of cardiac disease and examination of the cardiovascular system
- An electrocardiogram (ECG) if there is past medical or family history of serious cardiac disease, a history of sudden death in young family members or abnormal findings on cardiac examination
- Risk assessment for substance misuse and drug diversion.

Consider dexamfetamine when symptoms are unresponsive to a maximum tolerated dose of methylphenidate or atomoxetine.

If there is a choice of more than one drug, use the drug of lowest overall cost.

AREAS OF RESPONSIBILITY FOR SHARED CARE

This shared care agreement outlines suggested ways in which the responsibilities for managing the prescribing of dexamfetamine can be shared between the specialist and general practitioner (GP). GPs are invited to participate. If the GP is not confident to undertake these roles, then he or she is under no obligation to do so. In such an event, the total clinical responsibility for the patient for the diagnosed condition remains with the specialist. If a specialist asks the GP to prescribe this drug, the GP should reply to this request as soon as practicable.

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

The doctor who prescribes the medication legally assumes clinical responsibility for the drug and the consequences of its use.

REFERRAL AND INITIATION

Shared Care is only appropriate if it provides the optimum solution for the patient.

- Patients will only be referred to the GP once the GP has agreed in each individual case
- Arrangements to transfer treatment from secondary to primary care may be made between 4 weeks and 6 months from initiation of treatment, once the condition has been stabilised

Specialist Responsibilities	
1	To make a diagnosis based on timely, comprehensive assessment using appropriate validated questionnaires and including an assessment of child's cultural/social circumstances. To determine a comprehensive management strategy and discuss with the patient/carer the risks, benefits and alternatives of/for treatment.
2.	To initiate treatment and stabilise the dose, supplying at least the first 28 days treatment.
3.	To ask the GP whether he or she is willing to participate in shared care. Requests to GPs should be made in writing and must include appropriate information to allow an informed decision to be made.
4	On agreement from the GP, to provide the GP with appropriate information, including relevant clinical and physical assessment information to support the transfer of clinical responsibility.
5	To communicate promptly with the GP when treatment is changed, stopped or adjusted and to communicate changes in response to treatment or the condition itself.
6	Have a mechanism in place to receive rapid referral of a patient from the GP in the event of deteriorating clinical condition.
7	Ensure that clear backup arrangements exist for GPs to obtain advice and support.
8.	In accordance with the recommendations from NICE: o to undertake initial monitoring of heart rate and blood pressure and record on a centile chart before and after each dose change, and every 3 months (where measurements are required between outpatient appointments the consultant may request the GP to undertake the measurement and contact the consultant with the result); o To undertake initial height and weight measurements; measure height every 6 months, plot on a growth chart and weight three and six months after the start of treatment and every 6 months thereafter. In children and young people, plot weight on a growth chart, this should be reviewed by the healthcare professional responsible for treatment. o monitor general response to medication and progress at school and mood.
9.	Ensure that patients know what to do and who to contact if they experience adverse events or an exacerbation of their condition.
10.	To ensure the patient has sufficient supply of medication until such time as is appropriate for the GP to assume prescribing responsibility. This may include times to cover initial transfer of responsibility and/or after 6 month reviews
11.	To ensure the patient/ carer has given informed consent to their treatment.
12.	To provide the patient, carers/parents and teachers with comprehensive advice and information
13.	To be available for advice if the patient's condition changes, ensuring that procedures are in place for the rapid re-referral of the patient by the GP.
14.	To liaise with the GP on any suggested changes in prescribed therapy and to stop treatment where appropriate.
12	To refer to an adult psychiatrist where appropriate, including discussing the patient's

	case and transferring care to them.
13	Report adverse events to the CSM.

General Practitioner Responsibilities	
1.	Initially, to refer the patient and family for specialist advice.
2.	Reply to the request for shared care as soon as practicable.
3.	Where appropriate, to prescribe dexamfetamine at doses agreed with the specialist
4.	Monitor heart rate and blood pressure when requested by the consultant if it is required between outpatient appointments and communicate the results back to the consultant. Height and weight should be carefully monitored in children as growth retardation may occur. Children who are not gaining weight as expected should be referred back to specialist care for interruption of treatment.
5.	To deal with general health issues of the patient.
6.	Refer patient to the specialist if the patient's condition deteriorates.
7.	Stop treatment on the advice of the specialist or immediately if an urgent need to stop treatment arises.
8.	To provide support to specialists if they are transferring patients to adult psychiatric services.
9.	Report adverse events to the specialist and CSM

Patient's role (or that of carer)	
1	Report to the specialist or GP if he or she does not have a clear understanding of the treatment.
2	Attend appropriate consultant and GP appointments
3	Share any concerns in relation to treatment with dexamfetamine
4	Use written and other information on the medication.
5	Seek help urgently if it is suspected that dexamfetamine is causing side effects, or if the patient is otherwise unwell.

SUPPORTING INFORMATION

Dosage and Administration

Children:

In hyperkinetic states, the usual starting dosage for children aged 3-5 years is 2.5mg a day, increased if necessary by 2.5mg a day at weekly intervals; for children aged 6 years and over, the usual starting dose is 5-10mg a day increasing if necessary by 5mg at weekly intervals. Treatment should be stopped gradually since abrupt cessation may produce extreme fatigue and mental depression.

Contraindications

Contraindications included in the current Summary of Product Characteristics include:

• patients with hypersensitivity to dexamfetamine or other amfetamine derivatives or any of the excipients.
• patients with symptomatic cardiovascular disease, structural cardiac abnormalities and/or moderate or severe hypertensive disease.
• patients with advanced arteriosclerosis.
• during or for 14 days after treatment with an MAO inhibitor.
• patients with a history of drug abuse or alcohol abuse.
• patients with hyperthyroidism, glaucoma, porphyria or hyperexcitability.
• patients with Gilles de la Tourette syndrome or similar dystonias.
• pregnancy and lactation.

Special Warnings

Drug dependence may occur as tolerance develops. At such levels, a psychosis which may be clinically indistinguishable from schizophrenia can occur. Emergence of manic or psychotic symptoms can be caused by stimulants at usual doses. Caution should be used in

patients with impaired kidney function or unstable personality. Cardiomyopathy has been reported with chronic amfetamine use. Use with caution in patients on guanethidine and patients with mild hypertension or a family history of dystonias. If tics develop, discontinue treatment with dexamfetamine. Dexamfetamine is likely to reduce the convulsant threshold therefore caution is advised in patients with epilepsy. Height and weight should be carefully monitored in children as growth retardation may occur. Children who are not gaining weight as expected should have their treatment interrupted temporarily; caution is advised in the presence of anorexia nervosa. Patients should be monitored for the appearance, or worsening of, aggressive behaviour or hostility.

Treatment should be stopped gradually since abrupt cessation may produce extreme fatigue and mental depression.

Side Effects
Possible side effects include: abdominal cramps, colitis ischaemic, diarrhoea, dry mouth, nausea, chest pain, renal damage, alopecia, rash, sweating, urticaria, cardiovascular collapse, cerebral vasculitis, cardiomyopathy, myocardial infarction, palpitations, tachycardia aggressive behaviour, anxiety, confusion, impaired cognitive test performance, insomnia, obsessive-compulsive behaviour depression, drug dependence, delirium, dysphoria, euphoria, hallucination, irritability, nervousness, night terrors, panic states, paranoia, psychosis/ psychotic reactions, restlessness, tics, concentration difficulties, convulsion, dizziness, dyskinesia, dysgeusia, fatigue, headache, hyperactivity, hyperreflexia, intracranial haemorrhage, neuroleptic malignant syndrome, stroke, tremor, Tourette's syndrome, rhabdomyolysis, acidosis, anorexia, weight loss, mydriasis, visual disturbance, death due to cardiovascular collapse, growth retardation, hyperpyrexia, hypersensitivity including angioedema and anaphylaxis, sudden death.

Drug Interactions
Possibilities of interaction may occur with concurrent use of: Chlorpromazine, clonidine, meperidine, phenothiazines, MAOI's or use within the preceding 14 days, tricyclic antidepressants, adrenoreceptor blocking drugs, ethosuximide, phenobarbital and phenytoin, lithium, haloperidol, gastrointestinal acidifying or alkalising agents.

At current prices:
28 x dexamfetamine 5mg tablets = £3.00 (Drug Tariff, August 2009)

References

1. NICE CG 72. Attention deficit Hyperactivity Disorder. Sept 2008
2. Dexedrine Tablets (Dexamfetamine Sulphate) 5mg (UCB Pharma Ltd) Summary of Product Characteristics. September 2008.
3. Bournemouth, Dorset and Poole Prescribing Forum Pharmacological Intervention in ADHD
4. NICE TA98 Methylphenidate, atomoxetine and dexamfetamine for ADHD.

The manufacturer's summary of product characteristics (SPC) and the most current edition of the British National Formulary should be consulted for full information on contra-indications, warnings, side-effects and drug interactions.

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