

## Shared Care Protocol for the use of Atomoxetine (Strattera®) in Attention Deficit Hyperactivity Disorder in Childhood

Surrey PCT's Medicines Management Committee classification: *Amber\**

*Amber\**: Drugs that require initiation by a specialist in secondary/tertiary care but due to more widespread experience in primary care GPs are generally happy to prescribe on specialist advice without the need for a formal shared care protocol. This information sheet is available on the internet ([www.surreyhealth.nhs.uk](http://www.surreyhealth.nhs.uk)) forming part of Surrey's PCT's traffic light document giving GPs appropriate advice / guidance and is not required to be sent to the GP with the clinic letter. A minimum of one month supply of medication will be provided by the initiating consultant.

### Criteria for Use

- The diagnosis of ADHD is made by a Child Psychiatrist or a Specialist Paediatrician after a comprehensive assessment which includes the completion of Conner's questionnaires by the carers and teachers. If there is significant co-morbidity such as learning difficulties or other mental health problems, a full multidisciplinary assessment is advised. If medication is indicated as part of the treatment package, an initial prescription for atomoxetine is given by the consultant for a trial period of one month.
- Atomoxetine is considered second line treatment at ASPH NHS Trust for ADHD after methylphenidate. Reasons for switching to atomoxetine are: poor effectiveness of stimulants, worsening tics, sleep disturbance, appetite disturbance and any other side effects.
- If improvement of symptoms is not observed after appropriate dosage adjustment over the three months period, the drug should be discontinued by the consultant. The medication may be stopped abruptly; there is no tapering off necessary.
- It is the consultant's responsibility to agree aftercare or for stopping atomoxetine when the patient reaches 18 years of age.
- All children and families with a child taking atomoxetine should receive psychological and / or educational interventions with a view to improving the symptoms of ADHD and allowing children to reduce their need for medication. The extent of these interventions and the level of need will be assessed and agreed with the individual clinician and family.
- Explanations given to the family about medication are important. For example children should not be told that the medication is the only thing that can control their behaviour. Explanations should always seek to foster healthy development trajectories for children.

### Responsibilities of the Consultant

- Diagnosis of ADHD and decision to initiate treatment.
- Ensure baseline monitoring of height, weight, BP have been performed plus any additional relevant investigations.
- Initiation and stabilisation of drug treatment. The GP is not expected to enter into a shared care agreement until the patient is stabilised on atomoxetine and the parents at this stage are instructed to communicate directly with the clinic. As atomoxetine is not considered first line treatment a GP might have agreed shared care previously with another drug. If the decision to switch treatment due to side effects/ poor response is made by the consultant then another shared care agreement should be made between the consultant and the GP once the patient has stabilised on atomoxetine.
- Liaison with other members of the multidisciplinary team responsible for the child's development. The parents and class teachers are given information about atomoxetine in particular monitoring the effects and side effects of treatment. To assess the effects of the medication continued liaison is required with the parents and class teachers.
- To supply the medication until the dose is stabilised.
- Set the review interval and criteria. Follow up should take place in the Consultant led clinic four weeks after initiation of the treatment to assess if being effective. Further follow up should then take place in the Consultant led clinic within four months alongside school liaison. Once a child's treatment is stabilised, six monthly review appointments are offered by the Consultant. Specialist ADHD nurse, junior doctors and other staff are closely involved with the monitoring of the patients. When junior / middle grade doctors are helping the Consultants in the clinic, changes should be made after discussion with the Consultant only, and should be clearly stated in a letter to the GP.
- Undertake any necessary monitoring at clinic appointments: blood pressure, pulse rate, weight and height (including centiles).
- Arrange shared care with the GP once stabilised on medication. The GP will not be asked to prescribe the drug outside its licensed indications.
- Stop or modify the dosage as appropriate.

- Maintain good communication with the GP. A written letter should be sent to the GP after each clinic visit notifying the GP of changes in medication regime, adverse effects and results of the patient's routine monitoring. A copy of all correspondence / advice should be sent to Goldsworth Park health Centre or Ashford Clinic (which ever is appropriate) and to the school doctor for the named school to ensure all aware of the treatment plan and doses. This information could be shared with the teachers in the relevant school if the carers give consent for this to happen. Ideally the school doctor will monitor the child's clinical condition within school and act as a supporter and local advisor.
- Provide contact information should further assistance be needed.
- Be available to discuss any problems with the GP and other team members.
- Evaluate adverse drug reactions reported by the GP, school doctor or carer.
- Explain to the patient / carer their roles.

## Responsibilities of the GP

- Initial referral to secondary care on suspicion of ADHD.
- Monitor patient's overall health and well being.
- Continued prescription of treatment, once patient is stabilised on medication and shared care is agreed.
- To check that the patient is attending their six monthly specialist ADHD clinics and thus continued prescription is required.
- Symptomatic management of minor adverse effects.
- Report any adverse effects to the consultant and CSM where appropriate.
- Referral back to consultant if any problems arise.

## Patient's / Carer's roles

- Ask the specialist or GP for information, if he or she does not have a clear understanding of the treatment.
- Share any concerns in relation to treatment with Atomoxetine.
- Tell the specialist or GP of any other medication being taken, including over-the-counter products.
- Read the patient information leaflet included with your medication and report any side effects or concerns you have to the specialist or GP.

## Back-up Advice and Support

Contact details	Specialist	Telephone No:	E-mail address:
Specialist:	Dr B Zoritch	01932 722126	bozhena.zoritch@asph.nhs.uk
Hospital Pharmacy:	Debbie Hopper	01932 723359	deborah.hopper@asph.nhs.uk

## Shared Care Protocol for the use of Atomoxetine (Strattera®) in Attention Deficit Hyperactivity Disorder in Childhood

### Section 2 : Information

#### Dose / Licensing<sup>1</sup>

- Atomoxetine is indicated for use as part of a comprehensive treatment programme, where remedial behavioural methods alone have failed. Treatment must be initiated by a Child Psychiatrist or a Specialist Paediatrician for children and adolescents, for adults treatment must be initiated by a Psychiatrist with appropriate knowledge and experience of ADHD.
- Atomoxetine is licensed for children 6 years of age and older, adolescents and adults.
- Atomoxetine is usually given as a single dose in the morning, however if patients experience unwanted side effects when taking atomoxetine as a single daily dose they may benefit from taking it as a twice daily evenly divided dose in the morning and late afternoon or early evening. Atomoxetine can be taken with or without food; however gastrointestinal side effects can be decreased by administering atomoxetine with food.
- Dose:
  - Children and adolescents up to 70kg* : Initial total daily dose of 0.5mg/kg. This dose should be maintained for a minimum of 7 days before titrating upwards according to clinical response and tolerability. Maintenance dose is approx 1.2mg/kg/day, no additional benefit has been demonstrated for doses higher than 1.2mg/kg/day (however maximum recommended dose is 1.8mg/kg/day).
  - Children and adolescents over 70kg and adults*: Initial dose of 40mg. This dose should be maintained for a minimum of 7 days before titrating upwards according to clinical response and tolerability. Maintenance dose is 80mg, no additional benefit has been demonstrated for doses higher than 80mg (however maximum recommended dose is 100mg / day).
- ADHD symptoms can show an improvement by the first week of commencing atomoxetine and the maximum therapeutic effect can be seen from four weeks onwards.
- Atomoxetine can be discontinued without titrating down the dose.
- If improvement of symptoms is not observed after appropriate dosage adjustment over a three month period the drug should be discontinued by the consultant.

#### Cost

Drug	Dose	Cost
Atomoxetine (Strattera)	<70kg :Initially 0.5mg/kg/day gradually titrated to a recommended maintenance dose of 1.2mg/kg/day. >70kg : Initially 40mg gradually titrated to a recommended maintenance dose of 80mg.	28 x 10mg/18mg/25mg/40mg/60mg : £54.60. Max recommended dose: 1.2mg /kg/day (<50kg £54.60 / month >50kg £109.20 / month )

#### Cautions<sup>1</sup>

- Possible serious allergic events; although uncommon allergic reactions including rash, angioneurotic oedema and urticaria have been reported in patients taking atomoxetine.
- Hepatic insufficiency. For patients with moderate hepatic insufficiency doses should be reduced to 50% of the usual dose. For patients with severe hepatic insufficiency doses should be reduced to 25% of the usual dose.
- Pregnancy, lactation
- Many patients taking atomoxetine experience a modest increase in pulse and/or blood pressure. Atomoxetine should be used in caution in patients with hypertension, tachycardia, cardiovascular or cerebrovascular disease. Pulse and BP should be monitored.
- Height and weight should be monitored during treatment with atomoxetine. Growth rates (weight and height) after 2 years of treatment were near normal in a long-term follow-up study<sup>2</sup>.
- There have been rare reports of hepatic disorder in children receiving Atomoxetine. Prompt medical attention should be sought in case of abdominal pain, unexplained nausea, malaise, darkening of urine and jaundice.

- There were reports of suicidal thoughts and behaviour.

### Contra-indications<sup>1</sup>

- Known hypersensitivity to atomoxetine
- Patients on MAOIs (monoamine oxidase inhibitors). Atomoxetine should not be used within a minimum of 2 weeks after discontinuing therapy with MAOI. Treatment with MAOI should not be initiated within 2 weeks after discontinuing atomoxetine.
- Patients with narrow angle glaucoma, increased risk of mydriasis.

### Interactions<sup>1</sup>

- MAOIs: atomoxetine should not be used with MAOIs
- Pressor agents: because of possible effects on blood pressure
- CYP2D6 inhibitor drugs eg fluoxetine, paroxetine: Atomoxetine is primarily metabolised by the CYP2D6 pathway. Slower titration of atomoxetine may be necessary in patients who are also taking these drugs.
- Drugs that affect noradrenaline eg imipramine, venlafaxine: should be used cautiously with atomoxetine because of the potential for synergistic pharmacological effects.
- Atomoxetine should be used in caution with high dose nebulised or systemically administered (oral or intravenous) salbutamol (or other beta<sub>2</sub> agonists) because the action of salbutamol on the cardiovascular system can be potentiated.

### Side effects<sup>1</sup>

Frequency	Side effect
Very Common: >10%	<ul style="list-style-type: none"> <li>• Abdominal pain, vomiting</li> <li>• Appetite decreased</li> </ul>
Common: >1% to <10%	<ul style="list-style-type: none"> <li>• Influenza</li> <li>• Anorexia (loss of appetite)</li> <li>• Early morning awakening, irritability, mood swings</li> <li>• Dizziness, somnolence</li> <li>• Mydriasis</li> <li>• Constipation, dyspepsia, nausea</li> <li>• Dermatitis, pruritus, rash</li> <li>• Fatigue</li> <li>• Weight decreased</li> </ul>
Rare: <1%	<ul style="list-style-type: none"> <li>• Palpitations, sinus tachycardia</li> </ul>

Abdominal pain and decreased appetite are the adverse effects most commonly associated with atomoxetine, these effects are usually transient.

## Background

**Definition:** Attention Deficit Hyperactivity Disorder (ADHD) is one of the most commonly diagnosed behavioural disorders of childhood, affecting 1-5% of school age children. Its basic symptoms include developmentally inappropriate levels of attention, concentration, activity, distractibility and impulsivity. It causes problems at home, in school and with peer relationships and may have long term adverse effects on self-confidence, academic performance, vocational success and social development.

- It can be divided into three types, depending in whether inattention or hyperactivity is the predominant presentation
- It must have been present for at least 6 months and be maladaptive and inconsistent for the age of the child.
- There must be clear evidence of impairment in social and / or academic functioning
- Some impairment must be present in at least two settings
- These signs must be present in at least two settings
- These signs must be present before the age of seven
- The signs must not be accountable for by any other type of mental disorder although they may occur in conjunction with some development disorders.

Its consequences are low self-esteem, emotional and social problems which may lead to further problems with drug abuse etc. in the longer term. These children's academic achievements are often very low consequently often leading to employment problems.

## Diagnosis

Should be made for children and adolescents by a child / adolescent psychiatrist or paediatrician with a special interest in ADHD, involving the child, its carers, school and cultural influences. Depending on the circumstances the diagnosis may involve a multidisciplinary assessment including some of the following: educational and clinical psychologists, social workers etc. Atomoxetine is licensed for use in adults, which is not covered by this shared care protocol, in which diagnosis should be made by a psychiatrist with appropriate knowledge and experience of adult ADHD.

### Treatment monitoring (6 monthly):

- Height and weight – at Consultant clinics on centile chart
- Blood pressure and pulse rate – at Consultant clinics

In order to assess the effects of the drug on the child's emotional, physical or behavioural states there should be liaison with the school about the child's behaviour. The consultant will inform the GP how this will be done and by whom.

The GP should contact the consultant if patterns of behaviour deteriorate.

## Technology

- Atomoxetine is a highly selective and potent inhibitor of the pre-synaptic noradrenaline transporter without directly affecting the serotonin or dopamine transporters<sup>3</sup>.
- Atomoxetine is not a psychostimulant and is not an amphetamine derivative
- Atomoxetine does not worsen tics in patients with ADHD and comorbid chronic motor tics or Tourette's disorder
- Atomoxetine is not a controlled drug

### Audit/ Survey (To be carried out by specialist clinic)

- Total number of patients assessed
- Number referred to Consultant
- Number of patients receiving treatment
- Are they being monitored correctly according to shared care protocol?
- Length of time drug used
- Evidence of benefit: increase in daily living abilities etc
- Length of treatment, number discontinued and reason for discontinuation

**This does not replace the SPC which should be read in conjunction with this guidance. Prescribers should also refer to the appropriate paragraph in the current edition of the BNF.**

**Contact numbers for advice and support:**

Paediatric Consultants:	Dr B Zoritch	01932722126
	Dr W Nackasha	01932722764
Associate Specialist:	Dr M Potgieter	01932722126
ADHD specialist nurse:	Jane Brickell	01932722126
Medicines Information Frimley Park Hospital		01276 604744

**References:**

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