Attention deficit hyperactivity disorder: diagnosis and management

Steve Chaplin

The new NICE guideline on the diagnosis and management of attention deficit hyperactivity disorder (ADHD) in children, young people and adults extensively updates its 2008 document and its 2006 recommendations for treatment with methylphenidate, atomoxetine and dexamfetamine in children and adolescents. It is supported by a revised quality standard, in which the chief amendment to the original 2013 standard (QS39) is the removal of the quality statement that ‘Children and young people with moderate attention deficit hyperactivity disorder are offered a referral to a psychological group treatment programme’. A different psychological approach is now recommended.

Service organisation and training

The guideline’s first statement is: ‘People with attention deficit hyperactivity disorder (ADHD) would benefit from improved organisation of care and better integration of child health services, child and adolescent mental health services (CAMHS) and adult mental health services.’ This is unchanged from 2008, suggesting that the aspirations of a decade ago were not fully realised. NHS England is currently reorganising services for children and young people following the 2015 report from the Ministerial Children and Young People’s Mental Health and Wellbeing Taskforce.

It recommends that all aspects of ADHD care should be provided by ‘multidisciplinary specialist ADHD teams and/or clinics for children and young people, and separate teams and/or clinics for adults’ but also that: ‘The size and time commitment of these teams should depend on local circumstances (for example, the size of the trust, the population covered and the estimated referral rate for people with ADHD)’.

The transition to adult care is now recognised as a critical step for young people. Young people’s services should determine whether continuing care is needed and adult services should carry out a new assessment after transition is complete. NICE repeats its earlier advice that the time at which transition begins depends on the individual but should normally be complete by age 18 years. This phase of care is now covered by its 2016 guideline for all young people using health services and social care.

Referral and diagnosis

The guideline lists risk factors for ADHD (see Box 1) and notes the condition is under-recognised in girls and women, resulting in under-diagnosis, misdiagnosis and under-referral. There is no evidence behind some of these points but, based on clinical experience, NICE wants to raise awareness.

The 2008 recommendation that the diagnosis of ADHD in a child is one for a specialist remains – the bulk of the guideline is intended for ‘healthcare professionals with training and expertise in diagnosing and managing ADHD’ – but GPs can, after assessing the impact of symptoms, offer group-based support to parents.

Support

NICE has published guidance on improving the experience of adults who use NHS services and these principles apply equally to children and young people and their families or carers. The principles of care for children and young people with antisocial behaviour and conduct disorder also apply to those with ADHD but NICE emphasises this does not mean ADHD is always associated with coexisting antisocial behaviour and conduct disorder.

When ADHD is diagnosed, the person and their family/carers should have a structured discussion about the implications for their lives, covering education, employment and social issues, stigma, the risk of substance

Box 1. Groups of people and disorders associated with a raised risk of ADHD diagnosis

<table>
<thead>
<tr>
<th>Born preterm</th>
<th>Looked-after children and young people</th>
</tr>
</thead>
<tbody>
<tr>
<td>People with neurodevelopmental disorders (for example, autism spectrum disorder, tic disorders, learning disability [intellectual disability] and specific learning difficulties)</td>
<td>People known to the Youth Justice System or Adult Criminal Justice System</td>
</tr>
<tr>
<td>Adults with a mental health condition</td>
<td>Close family member diagnosed with ADHD</td>
</tr>
<tr>
<td>Oppositional defiant disorder or conduct disorder</td>
<td>Mood disorders (for example, anxiety and depression)</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>History of substance misuse</td>
</tr>
<tr>
<td>Acquired brain injury</td>
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misuse, the management of coexisting neurodevelopmental disorders and driving. The benefits of a diagnosis – access to services and treatment – should also be mentioned.

This discussion should inform the treatment plan. Information about support groups and sources of support should be provided, even when the diagnostic criteria for ADHD are not fully met. With consent, other health professionals and schools and colleges should be informed of the diagnosis and advised on accommodating an individual’s needs.

Management
A ‘comprehensive, holistic shared treatment plan’ should cover psychological, behavioural and occupational or educational needs, taking into account symptom severity and impairment, the person’s goals, resilience and protective factors, and the impact of other neurodevelopmental or mental health conditions.

Parents/carers of under-5s diagnosed with ADHD should be offered a training programme as the first treatment. If this, together with environmental modifications, is not sufficient, referral to a tertiary service is indicated.

Drug treatment is not recommended before this step. The first approach for older children and young people is also information, support and environmental modification but medication may be offered if impairment is still significant.

If this is effective but some impairment remains, cognitive behavioural therapy (CBT) is a further option. Adults whose ADHD causes impairment despite environmental modification should be offered medication. Non-pharmacological options, including psychological therapy and regular support, are alternatives or adjuncts.

Beyond recommending a healthy diet, there is no evidence that dietary modification is generally effective. If there is a possibility that diet may influence behaviour, this should be supported by diary evidence and jointly followed up with a dietitian.

Medication
Drug treatment is strictly a task for the trained specialist who should be familiar with the pharmacokinetic profiles of preparations for ADHD (the BNF advises brand prescribing of modified-release methylphenidate).

Before starting medication, the individual should be assessed again to ascertain that they still meet the criteria for treatment and to review their comorbidities and social and care needs, including the risk of drug diversion. A physical examination should include a cardiac assessment, untoward signs and history (see Box 2).

For children ≥5 years old and young people, the medication of first choice is methylphenidate (immediate- or modified-release). If improvement is not sufficient after six weeks’ treatment at an adequate dose, a switch to lisdexamfetamine should be considered. Dexamfetamine is an alternative if lisdexamfetamine is effective but its long duration of action is not tolerated (ie it causes insomnia).

If these options are unsuccessful or not tolerated, atomoxetine and guanfacine are further alternatives. NICE notes that the licensed indications for these drugs do not precisely coincide with its own age thresholds (for example, lisdexamfetamine is indicated from age six years onwards).

Adults should be offered lisdexamfetamine (or dexamfetamine, if the long duration of action is not tolerated) or methylphenidate as first-line medication, switching to the other if treatment with the first is unsuccessful. If neither is effective or not tolerated, the third option is atomoxetine. Again, NICE’s recommendations do not fully match the licensed indications.

Further options for medication are specialist-only – specifically guanfacine for adults, clonidine for children and atypical antipsychotics in addition to a stimulant but also any other drug. People with ADHD who also have anxiety disorder, tic disorder or autism spectrum disorder should be offered the standard treatment options. If an acute psychotic or manic episode occurs during drug treatment, the ADHD medication should be suspended until the episode has resolved, when continuation or a switch to an alternative should be considered.

After years of the NHS arguing against higher-priced modified-release preparations, it is noteworthy that they are preferred for treating ADHD – and for many reasons: convenience and better adherence, reducing stigma and problems of storing and administering controlled drugs at school, and to avoid the risk of misuse and diversion with immediate-release preparations of stimulants.

On the other hand, immediate-release preparations are better when titrating the dose and for people who need a flexible dosage regimen. It need not be one or the other: a morning dose of a modified-release product can be supplemented in the afternoon with an immediate-dose alternative. Stimulant formulations that can be injected or insufflated should be avoided and stimulants generally should be prescribed cautiously if there is a risk of diversion.

It is unusual for NICE to state exactly how dose titration should be carried out but it does so here. While increasing the dose and balancing benefits against adverse effects, ‘ADHD symptoms, impairment and adverse effects should be recorded at baseline and at each dose change on standard scales by parents and teachers, and progress reviewed regularly (for example, by weekly telephone contact) with a specialist’. Titration
should be slower and monitoring more frequent in people neurodevelopmental disorder, mental health disorder or poor physical health.

**Maintenance and monitoring**

Everyone with ADHD should be reviewed and followed up in a way that is appropriate to the severity of their condition. Those taking medication should be encouraged to record any adverse effects and these, together with therapeutic effects, should be assessed clinically using standard rating scales.

Height should be measured every six months in children and young people; weight should be monitored in everybody. If weight loss is a concern, dietary supplementation, taking the dose with instead of before food, or switching medication should be considered. If medication interferes with a child’s growth, a planned break over the school holidays should be considered.

Heart rate and blood pressure should be monitored but routine ECG is not recommended. Sustained resting tachycardia, arrhythmia or systolic blood pressure >95th percentile (or a clinically significant increase) are indications for dose reduction and referral. Tics may not be drug-induced but if they are their impact should be weighed against the benefit of treatment. Options include dose reduction, switching to guanfacine (children and young people only) or atomoxetine, or stopping treatment. Sexual dysfunction, seizures, sleep disturbance and behaviour change should also be monitored.

**Supporting adherence**

Particular attention is needed to support adherence, in line with NICE guidance, because people with ADHD may have difficulty following the treatment plan. Visual aids and parental oversight can be useful, together with incorporating doses into the daily routine and giving individuals personal responsibility for their health. There is also a need to encourage people who receive non-pharmacological interventions to overcome perceived barriers and commit to attending for therapy and follow-up.

The need to continue medication should be reviewed at least annually, based on a comprehensive assessment that includes its effectiveness, the individual’s preferences, its adverse effects, and its impact on school and employment. Any decision to alter or stop medication should involve the person with ADHD. Trials of a reduced dose or discontinuation may be considered if the balance of benefit and risk suggests the need, otherwise the decision to continue medication should be documented.

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**References**