Complete Summary

GUIDELINE TITLE

Attention deficit and hyperkinetic disorders in children and young people. A national clinical guideline.

BIBLIOGRAPHIC SOURCE(S)

Attention deficit and hyperkinetic disorders in children and young people. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2001. 26 p. (SIGN publication; no. 52). [155 references]

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SCOPE

DISEASE/CONDITION(S)

Attention deficit and hyperkinetic disorders

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Pediatrics
Psychiatry

INTENDED USERS

Advanced Practice Nurses
Nurses
Occupational Therapists
Physicians
Psychologists/Non-physician Behavioral Health Clinicians
Social Workers
Speech-Language Pathologists

GUIDELINE OBJECTIVE(S)

- To provide a framework for evidence-based assessment and management of attention deficit hyperactivity disorder/hyperkinetic disorder (ADHD/HKD), from which locally appropriate multidisciplinary approaches can be developed.

TARGET POPULATION

Children and young people with attention deficit and hyperkinetic disorders

INTERVENTIONS AND PRACTICES CONSIDERED

Initial and Specialist Assessment

1. Parent/carer interview, including, history of presenting complaint, obstetric and perinatal history, developmental history, family history, and family functioning
2. Child/young person interview
3. Laboratory measures (considered but not recommended)
4. Questionnaires
5. Psycho-educational assessment
6. Clinical examination (systems inquiry, details of previous health problems, current drug treatment, physical examination, vision and hearing tests)
7. Ancillary assessments, including physical investigations for underlying medical problems, psychiatric assessments, psychological assessments

Non-pharmacological Therapy

1. Psychosocial interventions, including clinic-based interventions (family psychosocial intervention and individual treatment) and school-based intervention
2. Dietary interventions (considered but not recommended)
3. Complimentary and alternative interventions
4. Social and community interventions
5. Multimodal interventions

Pharmacological Therapy

1. Psychostimulants, such as methylphenidate and dexamphetamine
2. Tricyclic antidepressants, such as imipramine, desipramine, nortriptyline, and clomipramine
3. Other drugs, such as clonidine, guanfacine, buproprion, lafaxine, selective serotonin reuptake inhibitors (SSRIs), and neuroleptics.

4. Combined drug therapy

MAJOR OUTCOMES CONSIDERED

- Core symptom control
- Developmental delays
- Comorbid conditions
- Learning problems
- Emotional and behavioural disorders

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The evidence base for this guideline was collected in accordance with SIGN methodology. Literature searches were performed for all areas covered by the guideline, based on an explicit search strategy. The search covered the Cochrane Library, EMBASE, MEDLINE and PSYCHLIT databases.

In addition, the searches were supplemented by references found by hand searches of recent journals, references cited in other guidelines, references from papers identified through the searches and from personal databases.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Statements of Evidence:

Ia: Evidence obtained from meta-analysis of randomized controlled trials.

Ib: Evidence obtained from at least one randomized controlled trial.

IIa: Evidence obtained from at least one well-designed controlled study without randomization.

IIb: Evidence obtained from at least one other type of well-designed quasi-experimental study.

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.

IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

The Scottish Intercollegiate Guidelines Network (SIGN) carries out comprehensive systematic reviews of the literature using customized search strategies applied to a number of electronic databases and the Internet. This is often an iterative process whereby the guideline development group will carry out a search for existing guidelines and systematic reviews in the first instance and, after the results of this search have been evaluated, the questions driving the search may be redefined and focused before proceeding to identify lower levels of evidence.

Once papers have been selected as potential sources of evidence, the methodology used in each study is assessed to ensure its validity. SIGN has developed checklists to aid guideline developers to critically evaluate the methodology of different types of study design. The result of this assessment will affect the level of evidence allocated to the paper, which in turn will influence the grade of recommendation it supports.

Additional details can be found in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50]). Available from the SIGN Web site.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The process for synthesizing the evidence base to form graded guideline recommendations is illustrated in the companion document titled "SIGN 50: A Guideline Developers' Handbook." (Edinburgh [UK]: Scottish Intercollegiate Guidelines Network. [SIGN publication; no. 50], available from the SIGN website.

Evidence tables should be compiled, summarizing all the validated studies identified from the systematic literature review relating to each key question. These evidence tables form an important part of the guideline development record and ensure that the basis of the guideline development group's recommendations is transparent.

In order to address how the guideline developer was able to arrive at their recommendations given the evidence they had to base them on, SIGN has introduced the concept of considered judgement.

Under the heading of considered judgement, guideline development groups are expected to summarise their view of the total body of evidence covered by each evidence table. This summary view is expected to cover the following aspects:

- Quantity, quality, and consistency of evidence
- Generalisability of study findings
- Applicability to the target population of the guideline
- Clinical impact (i.e., the extent of the impact on the target patient population, and the resources need to treat them.)

Guideline development groups are provided with a pro forma in which to record the main points from their considered judgement. Once they have considered these issues, the group are asked to summarise their view of the evidence and assign a level of evidence to it, before going on to derive a graded recommendation.

The assignment of a level of evidence should involve all those on a particular guideline development group or subgroup involved with reviewing the evidence in relation to each specific question. The allocation of the associated grade of recommendation should involve participation of all members of the guideline development group. Where the guideline development group is unable to agree a unanimous recommendation, the difference of opinion should be formally recorded and the reason for dissent noted.

The recommendation grading system is intended to place greater weight on the quality of the evidence supporting each recommendation, and to emphasise that the body of evidence should be considered as a whole, and not rely on a single study to support each recommendation. It is also intended to allow more weight to be given to recommendations supported by good quality observational studies where randomised controlled trials (RCTs) are not available for practical or ethical reasons. Through the considered judgement process guideline developers are also able to downgrade a recommendation where they think the evidence is not generalisable, not directly applicable to the target population, or for other reasons is perceived as being weaker than a simple evaluation of the methodology would suggest.

On occasion, there is an important practical point that the guideline developer may wish to emphasise but for which there is not, nor is their likely to be, any research evidence. This will typically be where some aspect of treatment is regarded as such sound clinical practice that nobody is likely to question it. These are marked in the guideline as "good practice points." It must be emphasized that these are <u>not</u> an alternative to evidence-based recommendations, and should only be used where there is no alternative means of highlighting the issue.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Grades of Recommendations

Grade A: Requires at least one randomized controlled trial (RCT) as part of a body of literature of overall good quality and consistency addressing the specific recommendation (Evidence levels Ia, Ib).

Grade B: Requires the availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation (Evidence levels IIa, IIb, III).

Grade C: Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality (Evidence level IV).

Good Practice Points: Recommended best practice based on the clinical experience of the guideline development group.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The draft guideline was discussed at a national open meeting on 8 February 1999, attended by 250 representatives of all the key specialties relevant to, and organisations with an interest in, the guideline. Specialties and organisations represented covered a wide range of interests, including paediatricians, psychologists, general practitioners, nurses, occupational and language therapists, learning support teachers, social workers and a number of voluntary sector organisations involved in children's health and learning. The draft guideline was also available on the Scottish Intercollegiate Guidelines Network (SIGN) web site for a limited period at this stage to allow those unable to attend the meeting to contribute to the development of the guideline.

The guideline was also reviewed in draft form by a panel of independent expert referees, who were asked to comment on the comprehensiveness and accuracy of interpretation of the evidence base supporting the recommendations in the guideline.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Note from the Scottish Intercollegiate Guidelines Network (SIGN) and National Guideline Clearinghouse (NGC): In addition to these evidence-based

recommendations, the guideline development group also identifies points of best clinical practice in the original guideline document.

The strength of recommendation grading (A-C) and level of evidence (Ia-IV) are defined at the end of the â œMajor Recommendationsâ field.

Assessment

B: Parental report of their children's symptoms is an essential component of the diagnostic assessment.

B: A history should be obtained of obstetric and perinatal complications

B: A developmental history should be obtained to show a chronological development of difficulties.

B: Laboratory assessments should not be used routinely

C: An assessment of the child's presentation in their educational placement is important for confirming diagnosis and identifying educational underachievement.

Non-pharmacological Therapy

A: Family-based psychosocial interventions of a behavioural type are recommended for the treatment of co-morbid behavioural problems.

B: Individual psychosocial interventions are not routinely recommended

B: Children with attention deficit hyperactivity disorder/hyperkinetic disorder require an individualized school intervention programme including behavioural and academic interventions.

Pharmacological Therapy

A: Psychostimulants should be considered as the first line of drug treatment for the core symptoms of attention deficit hyperactivity disorder/hyperkinetic disorder

A: Tricyclic antidepressants should be considered in the treatment of the behavioural symptoms of attention deficit hyperactivity disorder/hyperkinetic disorder

C: Combined drug treatment may be indicated in certain cases, especially where co-morbidity is a feature, but should be supervised by a specialist with expertise in the field.

Definitions:

Grades of Recommendations:

A. Requires at least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation. (Evidence levels Ia, Ib)
B. Requires the availability of well conducted clinical studies but no randomised clinical trials on the topic of recommendation. (Evidence levels IIa, IIb, III)
C. Requires evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities. Indicates an absence of directly applicable clinical studies of good quality. (Evidence level IV)

Statements of Evidence:

Ia: Evidence obtained from meta-analysis of randomized controlled trials.

Ib: Evidence obtained from at least one randomized controlled trial.

IIa: Evidence obtained from at least one well-designed controlled study without randomization.

IIb: Evidence obtained from at least one other type of well-designed quasi-experimental study.

III: Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies.

IV: Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The specific type of supporting evidence is explicitly identified in each section of the guideline.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate assessment and treatment of attention deficit and hyperkinetic disorder might:

- Lead to the development of an appropriate programme of intervention
- Improve core symptoms
- Decrease comorbid conditions
- Reduce conflicts and non-compliant behaviour
- Increase self-regulatory behaviours

- Improve social skills
- Improve cognitive function

POTENTIAL HARMS

Psychostimulants

- The most frequent psychostimulant side effects in short term studies are insomnia, reduced appetite, abdominal pain, headache and dizziness; less frequently, anxiety, irritability, or proneness to crying. Other adverse effects include involuntary movements (tics, Tourette's syndrome), loss of spontaneity, dysphoria, agitation, and behavioral rebound. Growth problems may also occur, but they are uncommon. (See Table 1 in the original guideline document for suggested management options.)
- Manufacturer recommendations for psychostimulants include "periodic" blood testing for haematological abnormalities. However, the Medicines Control Agency and Committee on Safety of Medicines which monitor suspected drug reactions report that adverse effects of this nature are very rare.

Tricyclic antidepressants

- Common side effects reported in clinical studies include anorexia, dry mouth (with a sour, metallic taste), dizziness, drowsiness, lethargy and insomnia, along with other anticholinergic symptoms. Irritability, mania, forgetfulness and confusion are signs of potential central nervous system toxicity.
- Potential cardiotoxicity of tricyclic antidepressants in children, particularly with desipramine therapy, has caused concern.
- Rapid withdrawal of tricyclic antidepressants should be avoided to prevent influenza-like symptoms due to cholinergic rebound. These include malaise, chills, coryzal symptoms, headache, vomiting and muscle aching. Social withdrawal, hyperactivity, depression, agitation, and insomnia may also occur. Patients with poor compliance may undergo periodic self-induced acute withdrawal which may be confused with drug-related side effects, inadequate dosing or worsening psychiatric disorder, making management difficult.

Combining drug treatments

- Combining drugs increases the risk for potential adverse interaction, e.g., elevation of tricyclic antidepressant levels with concurrent administration of psychostimulants, potential toxicity when clonidine and psychostimulants are combined, intraventricular conduction delays with pimozide and tricyclic antidepressants used together, and interference with the metabolism of drugs such as warfarin, and some antiepileptics.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

This guideline is not intended to be construed or to serve as a standard of medical care. Standards of medical care are determined on the basis of all clinical data

available for an individual case and are subject to changes as scientific knowledge and technology advance and patterns of care evolve.

These parameters of practice should be considered guidelines only. Adherence to them will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the doctor in light of the clinical data presented by the patient and the diagnostic and treatment options available.

Significant departures from the national guideline as expressed in the local guideline should be fully documented and the reasons for the differences explained. Significant departures from the local guideline should be full documented in the patient's case notes at the time the relevant decision is taken.

Many aspects of management, including the use of dietary and complementary therapies, have not been subject to systematic evaluation and therefore are not commented on in this guideline.

There is an extensive literature describing attention deficit hyperactivity disorder and hyperkinetic disorder, their causation, assessment and management. However, the suitability of much of this literature for inclusion in an evidence-based guideline is affected by a variety of methodological problems, for example:

- The diagnostic criteria for attention deficit hyperactivity disorder and hyperkinetic disorder have changed over time. This makes direct comparison between studies difficult.
- The diagnostic criteria have been developed for the primary school age group and their applicability to younger and older age groups remains to be established.
- The literature is mainly North American in origin and therefore based on United States samples and Diagnostic and Statistical Manual (DSM) criteria. Applicability to a United Kingdom population is uncertain. In addition much of the research evidence is based on studies of Caucasian males with only limited information available on non-Caucasians and females. Where relevant, these limitations have been highlighted.
- Co-morbidity with other disorders is common and may affect research findings where this has not been addressed.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

Implementation of national clinical guidelines is the responsibility of each National Health System Trust and is an essential part of clinical governance. It is acknowledged that every Trust cannot implement every guideline immediately on publication, but mechanisms should be in place to ensure that the care provided is reviewed against the guideline recommendations and the reasons for any differences assessed and, where appropriate, addressed. These discussions should involve both clinical staff and management. Local arrangements may then be

made to implement the national guideline in individual hospitals, units and practices, and to monitor compliance. This may be done by a variety of means including patient-specific reminders, continuing education and training, and clinical audit.

Key Points for Audit

Following the development of locally appropriate pathways or guidelines, prospective audit should be undertaken. The management of attention deficit hyperactivity disorder/hyperkinetic disorder by professionals for different backgrounds means that the development of a National Audit is complicated. Nevertheless, local service providers must ensure that minimum data sets are recorded which address the assessment and management of attention deficit hyperactivity disorder/hyperkinetic disorder.

Firm outcome measures in the assessment and management of attention deficit hyperactivity disorder/hyperkinetic disorder are difficult to characterise, although the use of standardised assessment measures in day to day clinical practice would be appropriate. Areas of assessment and management which might be audited are identified in the original guideline document.

IMPLEMENTATION TOOLS

Quick Reference Guides/Physician Guides

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Attention deficit and hyperkinetic disorders in children and young people. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2001. 26 p. (SIGN publication; no. 52). [155 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 Jun

GUIDELINE DEVELOPER(S)

Scottish Intercollegiate Guidelines Network - National Government Agency [Non-U.S.]

SOURCE(S) OF FUNDING

Scottish Executive Health Department

GUIDELINE COMMITTEE

Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Guideline Development Group: Dr Joanne Barton (Chairman); Dr Ken Aitken; Ms Sally Butler; Mr Robin Harbour; Mr Robert Johnstone; Dr Paul Eunson; Dr Moray Nairn; Dr Jamil Nasir; Dr Beverley Norton; Ms Christine Puckering; Miss Chris Robb; Dr Chris Steer; Dr David Stone; Dr Alan Woodley.

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

All members of the Scottish Intercollegiate Guidelines Network (SIGN) guideline development groups are required to complete a declaration of interests, both personal and non-personal. A personal interest involves payment to the individual concerned, e.g., consultancies or other fee-paid work commissioned by or shareholdings in the pharmaceutical industry; a non-personal interest involves payment which benefits any group, unit or department for which the individual is responsible, e.g., endowed fellowships or other pharmaceutical industry support. SIGN guideline group members should be able to act as independently of external commercial influences as possible, therefore, individuals who declare considerable personal interests may be asked to withdraw from the group. Details of the declarations of interest of any guideline development group member(s) are available from the SIGN executive.

GUIDELINE STATUS

This is the current release of the guideline.

This guideline was issued in 2001 and will be reviewed in 2003 or sooner if new evidence becomes available.

Any amendments to the guideline in the interim period will be noted on the Scottish Intercollegiate Guidelines Network (SIGN) Web site.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Scottish Intercollegiate Guidelines Network (SIGN) Web site:

- HTML format
- Portable Document Format (PDF)

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Quick reference guide: Attention deficit and hyperkinetic disorders in children and young people. Scottish Intercollegiate Guidelines Network, 2001 Jun. 1 p. Available in Portable Document Format (PDF) from the Scottish Intercollegiate Guidelines Network (SIGN) Web site.
- A Sample shared care protocol for the management of children and young people with attention deficit hyperactivity disorder is available in electronic form only from the SIGN Web site.
- SIGN 50: A guideline developer's handbook. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001 Feb. (SIGN publication; no. 50). Electronic copies available from the SIGN Web site.
- Appraising the quality of clinical guidelines. The SIGN guide to the AGREE (Appraisal of Guidelines Research and Evaluation) guideline appraisal instrument. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network, 2001. Available from the SIGN Web site.
- A background paper on the legal implications of guidelines. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on October 17, 2001. The information was verified by the guideline developer as of December 17, 2001.

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