rationale for the dosage steps, when using a dosing schedule (this has been included already in subsequent training in the unit).

(e) Clinical outcome should be recorded at least once, clearly, on the in-patient discharge summary.

Psychiatrists still need to be challenged to introduce modern ECT machines, using EEG monitors and dosing schedules to maximise treatment and minimise side-effects.

References

DUFFETT, R. & LELLIOT, P. (1998) Auditing electroconvulsive therapy. The third cycle. *British Journal of Psychiatry*, **172**, 401–405.

HILL-SMITH, A. J. & LEE, M. S. (1992) ECT – current practical administration. *Psychiatric Bulletin*, **16**, 269–271.

PIPPARD, J. (1992) Audit of electroconvulsive treatment in two national health service regions. *British Journal of Psychiatry*, **160**, 621–631.

— & ELLAM, L. (1981) Electroconvulsive treatment in Great Britain: a report to the College. *British Journal of Psychiatry*, **139**, 563–568.

ROYAL COLLEGE OF PSYCHIATRISTS (1995) *The ECT Handbook: the Second Report of the Royal College of Psychiatrists' Special Committee on ECT*. Council Report CR39. London: Royal College of Psychiatrists.

Farida Yousaf, *Consultant Psychiatrist, Surrey Oaklands NHS Trust, 23 High Street, Leatherhead, Surrey KT22 8AB;* Martin Lee, *Consultant Psychiatrist, St Helier NHS Trust, 36–38 High Street, Carshalton, Surrey SM5 3AG; and* *Jose King, *Research Psychologist, Henderson Hospital, 2 Homeland Drive, Brighton Road, Sutton, Surrey SM2 5LT*

*Correspondence

Multi-disciplinary assessment of attention-deficit hyperactivity disorder: a tertiary assessment package

H. Kat, Clay Frake and Rebecca Sawtell

Aims and method A tertiary assessment package was set up for the more equivocal cases of attention-deficit hyperactivity disorder (ADHD) who present with problems of inattention, impulsivity and overactivity. The structure of the three-day package was discussed, with an analysis of our experience in assessing 12 children using the pilot project. The package and its use in clinical practice are presented.

Results The pilot project described can be modified into a two-day package.

Clinical implications Assessment of ADHD conducted in multiple settings inherently has many advantages over single clinic assessment. We suggest that such an assessment protocol can be conducted cost effectively.

The Tanglewood Children's Day Resource Centre in Leicester provides a tertiary service to the Leicestershire Child and Family Psychiatric service and routinely runs extended assessment packages as part of its programme for children under the age of 12 years (Davison, 1996). Towards the end of 1996, there was a clear increase in the number of referrals from general practitioners with concerns regarding the diagnosis of attention-deficit hyperactivity disorder (ADHD) in Leicester. The trend coincided with growing public awareness of the disorder and its attendant media profile (a search for "attention deficit disorder" on the internet using the Lycos search engine yielded

https://doi.org/10.1192/pb.23.7.421 Published online by Cambridge University Press

in excess of 14 000 web sites). Although most cases of ADHD could be identified and diagnosed in a routine out-patient clinic the need was identified for a specialised assessment package to be set up for the more equivocal cases. In response to the service demand, Tanglewood devised an ADHD assessment programme as a pilot project. This pilot project formed an integral part of the review and revision procedure.

The Tanglewood ADHD assessment package

Drawing on the basic principles of the existing general assessment programme (Davison, 1996), it was decided that the children would be seen over three days so that they would not be subjected to an overly long programme on any one day. It would also give us the opportunity to observe shifts in behaviour that we know take place with increasing familiarity with the staff and the physical environment.

The programme was designed to include the common elements of standard clinical assessment of ADHD in use (clinical interviews with children and parents and standardised rating scales for parents and teachers). In addition, clinic analogue situations (similar to those described by Barkley, 1981 and Gordon, 1995) were used to replicate everyday scenarios. These included structured and free play, activity-based sessions, communal meals and a 'quiet' group activity in the form of a 30-minute session watching an age-appropriate video programme. The primary aim of these components is to assess the level of impulsivity, inattention and hyperactivity in the child. Each component may inform on any of these three cardinal features of ADHD.

In the pilot project, the team consisted of two psychiatrists, a psychologist, an occupational therapist, a music therapist and two nurses. In addition to playing a generic role (such as acting as keyworkers and helping with the housekeeping), team members also served their respective specialist function in providing the various individual assessments. The group activities in the package were run by the nurses, who are highly experienced in group work.

All cases referred to the programme had been seen on at least one occasion by the out-patient team. Upon receipt of the referral, the family was invited to an initial meeting during which more information was obtained and the structure of the programme was explained to them. The parents were asked to complete a Conners Parent Questionnaire (Conners, 1985) and permission was obtained to conduct a school visit and to send a Conners Teacher Questionnaire (Conners, 1969) to the teacher for completion. By local agreement, the referring clinicians retained case management of the patients. Typically, four children were assessed in each package, which ran over three days on three consecutive weeks, starting at 10 am and ending at 1.45 pm (Table 1).

Procedures used in the pilot project

The team involved in the assessment met at the end of each day to discuss the various findings and observations of the day for each individual child. The final meeting, on the last day of the assessment package, involved a review of each child's presentation and a formulation in terms of diagnosis and further management. The DSM–III–R (American Psychiatric Association, 1987) criteria were used as a diagnostic guideline. Each member of the team provided a detailed written report, along with a four-point rating similar to the scale used in the Conners Questionnaire ('not at all', 'just a little', 'pretty much' and 'very much') for the evidence of hyperactivity, inattention and impulsivity observed during the sessions at Tanglewood and during the school visit. Where indicated, formal psychometric assessment was arranged and conducted before the final report was compiled.

Table 1. Three-day programme

Time	Week 1 (children only)	Week 2 (children only)	Week 3 (parents and children)
10–10.15 am	Introduction	Introduction	Introduction
10.15–11 am	Individual assessment session (psychiatric)	Individual assessment session (psychology)	Games
11–11.45 am	Games	Video group	Structured family activity
11.45 am–12.00 pm	Preparation for lunch	Preparation for lunch	Preparation for lunch
12–12.45 pm	Lunch	Lunch	Lunch
12.45–1 pm	Playtime	Playtime	Playtime
1–1.45 pm	Individual assessment sessions (occupational therapy)	Individual assessment session (music therapy)	Family session
1.45 pm	Goodbye	Goodbye	Goodbye

https://doi.org/10.1192/pb.23.7.421 Published online by Cambridge University Press

In examining the usefulness of classroom observation, the clinicians' reports of the children's activity level were compared indirectly with teachers' and parents' ratings of activity. The hyperactivity indices of the Conners Teacher and Parents Questionnaires were examined to determine their correlation with the final diagnosis. These hyperactivity indices have been used in research to rate hyperactivity in children (Barkley, 1981). In this project, for both these scales, a score of two standard deviations above the mean corrected for age was considered as indicative of significant hyperactivity (the norms were taken from data published by Goyette *et al*, 1978). Similarly, clinicians' ratings of activity were examined for their correlation with the eventual diagnosis.

Results

A total of 12 children were assessed in the pilot project. Seven children received a diagnosis of ADHD, two of whom had additional features of poor motor coordination and control (dyspraxia) and met Gillberg's criteria for Disorder of Attention, Motor Control and Perception (DAMP) (Gillberg *et al*, 1983). Of the remaining children, three were diagnosed as suffering from emotional disorder, one was found to have a specific learning disability and the remaining children had no formal diagnosis.

The management recommendations made following the assessment included one or more of the following: referral to a six-day behaviour management programme (attended by children and their parents) run by Tanglewood; trial of medication; referral to a social skills group; behaviour management with the out-patient team; and further investigations or referral (such as to the educational psychologist or paediatric neurologist).

In the pilot project, 9/12 Conners Parent Questionnaires were completed and returned. In all nine, the children were scored as significantly hyperactive (with scores greater than two standard deviations from the mean on the hyperactivity index). Five of these children were eventually diagnosed as suffering from ADHD.

Eight sets of Conners Teacher Questionnaires were returned to us. Five children were scored as significantly hyperactive. Of these five children, four received a diagnosis of ADHD. Two of the three children scored by their teachers as not significantly hyperactive were diagnosed as not having ADHD.

Using the four-point scale described earlier, eight children were rated as 'not at all overactive' and three as 'occasionally overactive' during classroom observation (a school visit was not made for one child). Five of the children in the first category were eventually diagnosed as suffering from ADHD, whereas two of the three 'occasionally overactive' children were not diagnosed as having ADHD. Thus, of these three modes of assessment (classroom observation and the two Conners Questionnaires), the Conners Teacher Questionnaire agreed most consistently with the diagnosis.

Discussion of the pilot project

The original assessment package, as described, is comprehensive but expensive in terms of professional hours. Some of the component sessions share many common features and the duplication of assessment processes is difficult to justify in the face of limited resources. For the assessment package to remain an ongoing part of the service, a number of revisions will need to be made.

The school visit – an expensive venture – has not been shown to confer any additional advantage, whereas the Conners Teacher Questionnaire has shown a higher degree of agreement with the diagnosis. We would, therefore, suggest that a school visit should only be conducted when it is deemed necessary to confirm or supplement the information provided by the teacher. The individual assessment of the child can be reduced to one unstructured session and one structured activity-based session with the occupational therapists. In the pilot project, the information obtained from the sessions with the music therapist was similar in many ways to the findings of the occupational therapist in the activity-based session. As such, we would suggest that assessment sessions with a creative therapist be reserved for children with special indications, such as difficulties with verbal interaction.

It was also our clinical impression that the structured parent–child activity provided more information about the parent–child relationship than the large group-game session for parents and children.

In making these revisions, the programme is effectively reduced to two days. This represents a significant improvement in terms of cost effectiveness and the number of patients who can be assessed over a unit of time.

Conclusion

ADHD is a common psychiatric disorder (Sandberg, 1996) that is being diagnosed increasingly in this country. Well-defined diagnostic criteria and assessment guidelines (e.g. the practice parameters of the American Academy of Child and Adolescent Psychiatry, 1997) are available

https://doi.org/10.1192/pb.23.7.421 Published online by Cambridge University Press

and most cases of ADHD can be identified at the level of generic child and family psychiatric clinics. However, there remains a place for specialised arrangements for the assessment of the more equivocal cases. An assessment package as described in this paper offers the advantage of seeing the child in multiple settings that often replicate situations in which he or she faces difficulties in everyday life; the multimodal and comprehensive nature of the package allows for the situational variability of the condition (Barkley, 1990).

The management of ADHD ideally should include elements of behaviour management, parent training, self-control training, manipulation of the environment and possible use of stimulant medication. The involvement of workers from different disciplines helps to set in motion an integrated approach to the management of a complex problem that impinges on many aspects of a child's life (Teeter & Semrud-Clikeman, 1995).

Acknowledgements

We wish to thank Dr Nisha Dogra, Dr Andrew Parkin and Dr David Stretch of the Greenwood Institute of Child Health, Leicester and Dr Aris Ambelas of Westcotes House, Leicester for their advice on this paper and the staff of Tanglewood who contributed to the project.

References

AMERICAN PSYCHIATRIC ASSOCIATION (1987) *Diagnostic and Statistical Manual of Mental Disorders* (3rd edn, rev) (DSM-III-R). Washington, DC: American Psychiatric Association.

AMERICAN ACADEMY OF CHILD AND ADOLESCENT PSYCHIATRY (1997) AACAP Official Action: practice parameters for the assessment and treatment of children, adolescents and adults with ADHD. *Journal of the American Academy of Child and Adolescent Psychiatry*, **36** (suppl.), 85–121.

BARKLEY, R. A. (1981) *Hyperactive Children: a Handbook for Diagnosis and Treatment*. New York: Guilford Press.

— (1990) *Attention Deficit Hyperactivity Disorder: a Handbook for Diagnosis and Treatment* (2nd edn). New York: Guilford Press.

CONNERS, C. K. (1969) A teacher rating scale for use in drug studies with children. *American Journal of Psychiatry*, **126**, 884–888.

— (1985) Rating scales for use in drug studies with children. *Psychopharmacology Bulletin*, **21**, 809–843.

DAVISON, I. S. (1996) Innovation and efficacy: the challenges of a new children's resource. *Child Psychology and Psychiatry Review*, **1**, 26–30.

GILLBERG, C., CARLSTROM, G. & RASMUSSEN, P. (1983) Hyperkinetic disorders in children with perceptional, motor and attentional deficits. *Journal of Child Psychology and Psychiatry*, **24**, 233–246.

GORDON, M. (1995) *How to Operate an ADHD Clinic or Sub-Speciality Practice*. New York: GSI Publications.

GOYETTE, C. H., CONNERS, C. K. & ULRICH, R. F. (1978) Normative data on revised Conners Parent and Teacher rating scales. *Journal of Abnormal Child Psychology*, **6**, 221–236.

SANDBERG, S. (1996) Hyperkinetic or attention deficit disorder. *British Journal of Psychiatry*, **169**, 10–17.

TEETER, P. A. & SEMRUD-CLIKEMAN, M. (1995) Integrating neurobiological, psychosocial, and behavioural paradigms: a transactional model for the study of ADHD. *Archives of Clinical Neuropsychology*, **10**, 433–461.

*H. Kat, *Senior Registrar in Child and Adolescent Psychiatry*, Clay Frake, *Community Psychiatric Nurse, and* Rebecca Sawtell, *Principal Clinical Child and Adolescent Psychologist, Leicestershire Child and Family Psychiatric Service, Westcotes House, Westcotes Drive, Leicester LE3 0QU*

*Correspondence

https://doi.org/10.1192/pb.23.7.421 Published online by Cambridge University Press