

Attention Deficit Hyperactivity Disorder - A Pre Audit Study of the Pattern of Drug Treatment in a Specialist Community Child and Adolescent Mental Health Service in the UK

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Abstract: Attention deficit hyperactivity disorder (ADHD) is a neuro developmental disorder and a common disorder of childhood with functional impairments and a significant personal, family and psychosocial burden. This is a pre audit study of children and young people with ADHD who were referred to the Specialist Community Child and Adolescent Mental Health service in Calderdale, Halifax in East Yorkshire. The main aim of the pre audit study was to determine and study the pattern of drug treatment with psycho stimulant medication in the service as well to study the socio-demographic characteristics of the children and young people referred. This was a cross - sectional study. Twenty cases were randomly selected from the available records and data was extracted directly from the medical records using data sheets designed for the pre-audit study. Males constituted 85% of the study sample and Females 15%. Age group 9-12 constituted 65% of the sample. The modified release preparation of Ritalin was more commonly prescribed than the immediate release preparation. Some practical advantages and limitations of brands are highlighted. The initial findings are useful and would help to modify the data sheet for improved quality and help to set the 'audit standards' for the main audit study. This has clinical governance implications in terms of delivering the most expedient quality care in a Child and Adolescent Mental Health Service.

Keywords: Audit, Adhd, Treatment, Psycho stimulants.

INTRODUCTION

This is a pre – audit (BMJ Audit 2008) study of children with Attention deficit hyperactivity disorder (ADHD) presenting to the Specialist Child and Adolescent Mental Health Service in Calderdale, Halifax in East Yorkshire. The aim is mainly to study the pattern of prescription of psycho stimulants to the children and young people referred to the service from a variety of sources as well as to review the socio demographic characteristics of the client group during the period of study. Attention deficit hyperactivity disorder is a neuro developmental disorder and is a common disorder of childhood presenting to a community based specialist Child and Adolescent Mental Health service commonly referred to as a Tier 3 service in the UK. Following a review of the international scientific literature Polanczyk and colleagues (2007) estimated the worldwide prevalence to be about 5 % with limited regional variability based on environmental factors.

The American Diagnostic and Statistical Manual, (APA 2013) and the World Health Organisation, International Classification of Diseases (WHO, 1992) describe the core features of this condition as hyperactivity, Inattention and Impulsiveness which has to be persistent across settings.

ADHD is associated with significant co morbidity (McBurnette and Piffner 2009), functional impairments and family burden (Coghill *et al.* 2008).

In clinical practice ADHD May co exist with another neuro developmental disorder such as an Autism spectrum disorder and or a tic disorder. It may also be associated with a conduct disorder or oppositional defiant disorder to varying degrees depending on the particular study.

In assessing children with the diagnosis of a possible ADHD the National Institute for clinical Excellence (NICE Clinical Guidelines 72,2008) guidelines emphasise the need for a joint multidisciplinary specialist assessment which may include specialist paediatric, psychiatry, clinical psychology, nurse practitioner or any other practitioner who have experience and expertise in assessing children and young people with Attention deficit hyperactivity disorder. Guidelines also emphasise the need for a system of communication and protocols in place to facilitate information sharing between the different teams for example, paediatric, Child and Adolescent mental health team, Forensic and the Adult teams.

As part of the assessment there should be a 'multisource' feedback from the parents or carers and from the school.

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Careful and detailed history should be obtained from the parents to include the duration of symptoms, severity, any behaviour problems reported at school, any exclusions and or detentions at school, pregnancy history, birth history and early developmental history, past medical and psychiatric history and Family and social history. Additional report from the school, class teacher and Educational Psychologist and the Special Educational Needs Coordinator will provide further insights and give an overall view. Sometime the Health care practitioner may need to carry out direct observation of the child or young person whilst at school. Psychometric measurements using for example the Conners' questionnaire, strengths and difficulties questionnaire as well as the Clinical Global assessment scale are useful adjuncts.

METHOD OF STUDY

In this pre audit cross-sectional study twenty cases of children currently open to receiving services from a Specialist Community Tier 3 child and Adolescent Mental Health service were studied. Questionnaire (data sheets) were designed to capture the aims and objectives of the pre audit study. Case notes were randomly manually selected from the records room by four administrative staff. Each selected five case notes. All the twenty case notes extracted were then analysed. There were five consultant child and adolescent psychiatrists as part of the overall multidisciplinary team providing a comprehensive child and adolescent mental health service.

RESULTS

Table 1: Gender

Male: 17 (85%)
Female: 3 (15%)

Table 2: ADHD – Sex Distribution Percentage %

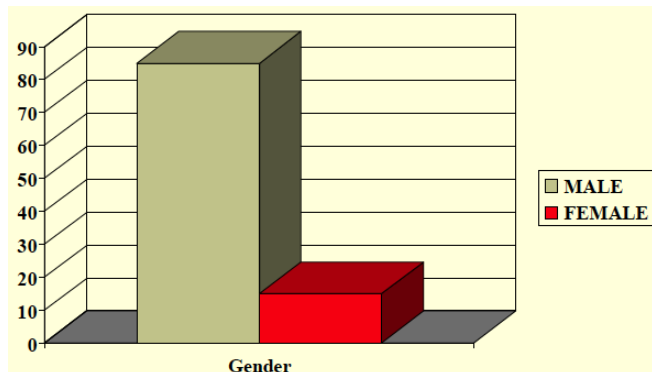


Table 3: Age Distribution of Cases

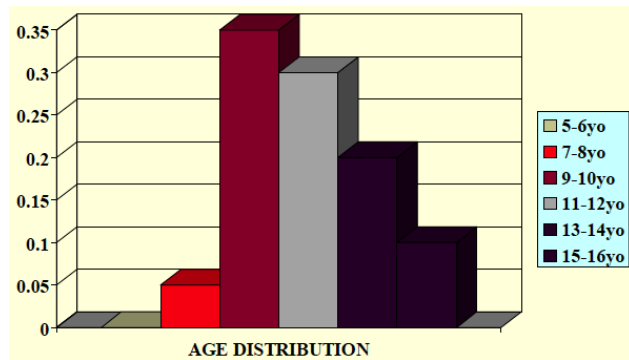


Table 4: Medication (Ritalin) - Type of Preparation

IR – Immediate Release (8) 40%
MR – Modified Release (10) 50%

Table 5: Ritalin – Type of preparation (2)

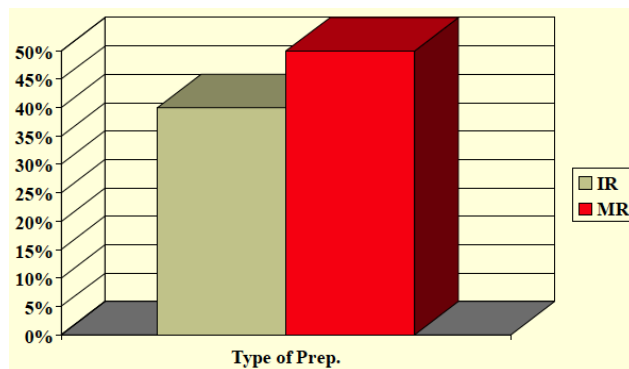


Table 6: Type of Medication

Methyl phenidate HCL (7)
Equasym XL (7)
Dexamphetamine (2)
Concerta (3)
Atomoxetine (1)
Other Drugs: Risperidone (5)

Table 7: Type of Medication

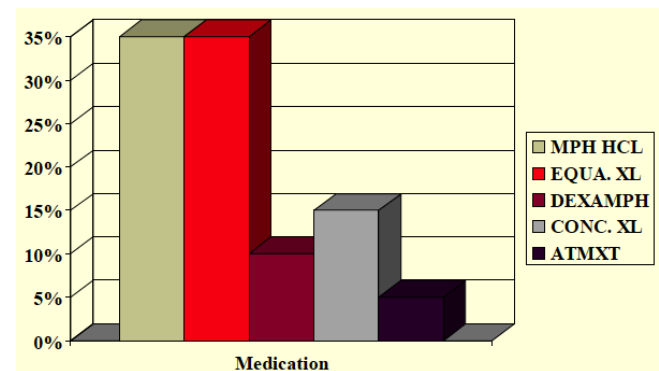


Table 8: Duration of Treatment with Medication: (Psycho stimulants)

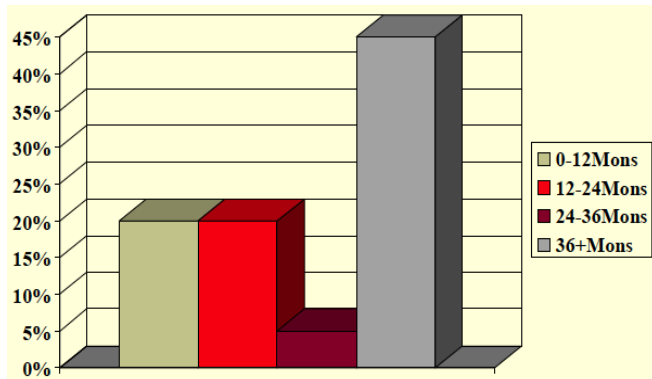


Table 9: Common Side Effects 20%

Loss of Appetite 3
Weight loss 2
No other side effects reported/documentated

Table 10: Additional Psychotherapy/Psychological Intervention

Behaviour Therapy/Management (7)
1;1 Work (MHP) (9)
Parent Effectiveness Training (1)
Psycho Education (2)
Family Therapy (1)
Educational Psychology/IEP (6)
*YOT (youth offending team),
Fire Service, Police (2)

Table 11: Psychological Intervention/Psychotherapy-ADHD pre -Audit study

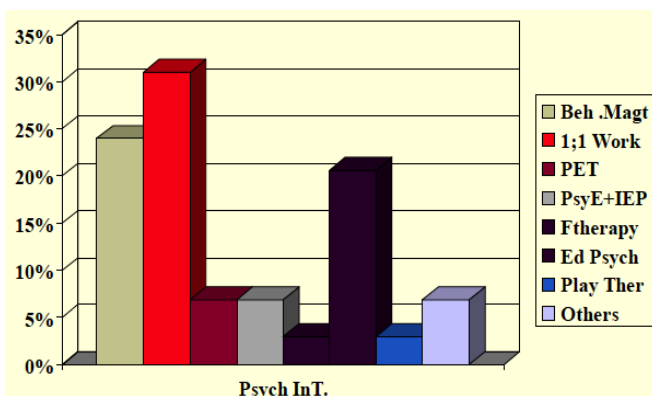


Table 12: Co – Morbidity: No (5) 20%

Conduct and Oppositional Disorder (2)
ASD and Learning disabilities (1)
Attachment Disorder (1)
Aggressive Behaviour and Learning disabilities (1)

DISCUSSION

The National Institute for Clinical Excellence in the UK have provided guidance and recommended that people with Attention deficit Hyperactivity disorder require an Integrated care that addresses a wide range of personal, social, educational and occupational needs. It further recommended such care to be provided by adequately trained health care and educational professionals (NICE ADHD Guideline 2008). This is with a view to maximise the outcome. Arrangements for transition between Child and Adolescent and Adult services have also been highlighted as well as age appropriate clinical, psychological services.

In this community Tier 3 Child and Adolescent Mental Health service the diagnosis of ADHD is usually made after referral to the team by a joint specialist multidisciplinary team. This is comprised of the consultant Child and Adolescent psychiatrist, clinical psychologist or another mental Health practitioner with expertise in assessing Children and young people with ADHD. In addition to this assessment, validated questionnaire are also used mainly Conners' questionnaire (Parent and Teacher long and the abbreviated version), Strengths and difficulties questionnaire, Health of the Nations Outcome scale for child and adolescent psychiatry, HonosCA (Garraida, Yates and Higginson 2000; [Http://www.rcpsych.ac.uk/cru/children and Adolescents. aspx](http://www.rcpsych.ac.uk/cru/children%20and%20Adolescents.aspx) 2015) is usually completed at the initial stage as a baseline as well as a brief Risk Assessment. If the referral is from Education, usually this would be accompanied by a detailed school report. A direct school observation is also carried out as is needed but this is not routine and is usually reserved for borderline cases or where the diagnosis is not clear and or if sometime as the case may be the presentation is not typical because of other co existing or co occurring disorders say for example another neuro developmental disorder such as an autism spectrum disorder or conduct disorder and oppositional defiant disorder.

In the pre Audit study the total number of cases surveyed was twenty (20) of which Males constituted 85% (17) and Females 15% (3) with a preponderance of Males in the study.

The Age distribution was in the range 5 -16. The age group 9-10 constituted 35% and the age group 11-12 constituted 30% which means that the age group 9-12 accounted for 65% of the total.

In terms of the commonest preparation of Ritalin (Methylphenidate Hydrochloride) used, 40% (8) were prescribed Immediate Release preparation while 50% (10) were put on the modified release at the commencement of treatment. This means that both the immediate release preparation as well as the modified release were popular but there was a slight preference for the Modified release preparation. Some of the practical advantages of the modified release preparation are the relatively longer duration of action of up to 8-12 hours (www.medsafe.gov.nz/prof/datasheet/concerta_tab.pdf 2015) with some brands, Single daily dosage which minimises the fluctuations between the peak and trough levels associated with the immediate release preparations, it can be taken at breakfast time before the child leaves home on a school day and therefore obviates the need to have a lunchtime dose at school. It also prevents inconveniences for the Teacher in terms of providing supervision for the administration of the medication to the child at lunch time and the issue of stigma and embarrassment for the child can be avoided.

One disadvantage of the Modified release preparation is that although most modified release preparation have a mixture of a proportion of the Immediate release and Modified release in the same tablet or capsule. In clinical practice the onset of action may not be as quick as for an immediate Release preparation with a relatively faster onset of action and secondly the duration of action does not last long enough for some children. A disadvantage with the Immediate release medication is the requirement to take it at least 2 to 3 times a day in order to maintain a good blood level and a sustained action. Another disadvantage is the requirement for lunchtime medication at school which may create some inconveniences. For some of the Children on Immediate release preparation there may be a requirement for a top up dose after school to help with focussing on tasks and improve concentration with home work which in itself is a good idea but may exacerbate the sleep difficulties which is a main

problem in treating and prescribing Ritalin for children with ADHD.

Other practical problems with the administration of medication at lunch time is that the dedicated teacher may forget, may be on annual or sick leave or there may be lapses or failure to refill the stock at school depending on the policy of the particular school. At other times there may be a gap in communication between the parents and school. This will eventually lead to missing the dose and child becoming more unsettled at school. Lunch time medication may also get in the way of after school clubs say for example a rugby player who really likes to enjoy his game may feel subdued after his lunchtime medication and this may take the 'sparkle' of him and may be inclined to try and avoid his afternoon dose which then raises the issue of compliance.

The common types of medication prescribed as identified by the study are methylphenidate hydrochloride 7, Equasym XL 7, Dexamphetamine 2, Concerta 3, Atomoxetine 1, other drugs Risperidone 5. Five (5) of the children were also being prescribed low dose Risperidone in addition to the stimulant medication because of severe behaviour problems at school which has led to several detentions and exclusion. A couple were on the verge of permanent exclusion from school. It is thought that this subgroup of children had other co morbidities apart from the ADHD. The duration of treatment varied from about 1 year to over 3 years. 45% of the study sample were on treatment for longer than 36 months. Side effects were reported and documented in the case notes in 20% of the cases. The common side effects were loss of appetite (3), Weight loss (2), No other side effects were documented. This may be a true reflection of the prevalence of side effects in the sample studied but it is also possible that not all the side effects were reported and or documented in the notes. It may perhaps be the case that parents and teachers were so relieved and satisfied with the progress made by the reduction in the frequency and severity of symptoms that they did not actively look for and report this. Other intervention strategies and psychological approaches used to manage symptoms in addition to medication include Behaviour Therapy/ Management (7), one to one work with a Mental health practitioner (9), Parent Effectiveness Training (1), Psycho education (2), Family Therapy (1), Educational Psychology with individual Education plan (IEP) (6), Exposure Therapy by the Fire service and the police. This involves the young person undertaking a few sessions and classes

of an awareness course with the fire service for Psychoeducation regarding the damaging effects a fire incident can cause. Some of the young persons were also taken to the police custody for observation only and as a deterrent so that they can see first hand what detention in the police custody is like. 20% percent of the cases (5) were documented to have some co morbidity with ADHD. Conduct and oppositional defiant disorder 2 cases (40%), Autistic spectrum disorder and Learning disabilities 1 (28%), Attachment disorder 1, Aggressive behaviour and learning disability 1.

As a first line to treatment the NICE guidelines have recommended a parent Training / education programme which may be individual or group based but whereby this is not possible for example for operational reasons due to low participant numbers or where the intervention is ineffective then treatment with medication should be considered as the next line of action. In our observation by the time children with the condition are referred to the specialist community child and adolescent mental health service treatment with medication will usually be required in addition to the other psychological interventions or parenting programmes.

In terms of the drug treatment for the condition NICE guidelines recommend a choice of Methylphenidate, Atomoxetine and Dexamfetamine depending on the existence of any co morbidity, side effects and patient's preference.

In this pre Audit study (17) of the patients were on methylphenidate hydrochloride of which 10 were on the modified release preparation. Two of the cases were treated with Dexamfetamine and only one treated with Atomoxetine and 5 treated with Risperidone an atypical antipsychotic because of comorbidity.

CONCLUSION

The initial findings from this pre audit study are helpful and they provide useful insights. It would help to inform and modify the questionnaire for collecting the

data for the main audit study. It would also help to set the standards for the main Audit study. The current practice would then be measured or assessed against the Audit Standards and any deficits and or gaps and areas for improvement would then be identified and corrections will be made in terms of any necessary review or adjustments to practice. This is important in order to be able to deliver an improvement to the quality of service and health care. This has Clinical governance implications as already highlighted by Sally and Donaldson (1998). After the correction of any gaps or deficits identified a re audit would then be proposed at a later date to complete the audit cycle.

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