Clinical Article

Attention Deficit Hyperactivity Disorder – Can we do better?

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Abstract

Our aim was to identify markers in infancy and early childhood related to later development of attention deficit hyperactivity disorder (ADHD). This may help in early diagnosis and thus prevent negative consequences in children and parents. A retrospective analysis was conducted of 74 case notes of children with ADHD and 75 controls. Problems in infancy and early childhood were identified. Developmental delay and special educational needs were noted. Sleeping and feeding problems in infancy were much higher in the ADHD group i.e. 28% and 12% respectively as compared to 4% and 2% respectively in the control group. Speech delay was much more common in the ADHD group. Feeding and sleeping problems in early infancy in otherwise healthy infants, and later speech delay were identified as early markers of ADHD. These children should be followed by health visitors and be referred to pediatricians at appropriate time to avoid delay in diagnosis and appropriate therapy. *Int Pediatr. 2003;18(2):84-86.*

Key words: deficit hyperactivity disorder (ADHD), early markers, feeding problems, sleep problems

Introduction

Attention deficit and hyperactivity disorder (ADHD) represents one of the most prevalent childhood psychiatric disorders and affects approximately 2-5% of all children.[1,2] It is characterized by marked and pervasive inattention, hyperactivity and impulsiveness. It causes a child to underachieve academically and to behave poorly. When parents find a young child difficult, they may lose confidence or become excessively punitive. The use of force, and hostile critical parenting leads to resentment that sows the seeds for an increasingly fraught relationship. If a difficult child finds early acceptance, nurture and support, this greatly reduces the risk of oppositional behavior and negative outcome. It also avoids frustration due to under performance and preserves the self-esteem of these children.

The aim of this study was to identify possible early risk factors in children with ADHD so that they can be diagnosed early and parents can be advised accordingly.

Patients and Methods

A retrospective analysis of case notes of children known to have ADHD in the Medway area was undertaken. The health record of 74 children was specifically searched for significant problems in infancy and childhood, especially problems with feeding and sleeping. A search was done in both the health visitor's and doctor's notes. Feeding and sleep problems were considered present when the babies were reported to the health visitors or attended a sleep clinic or feeding clinic run by health visitors in the area. Presence of developmental delay in any area as recorded by the community pediatric doctor and level of special needs was noted. The diagnosis of ADHD was based on DSM IV criteria. Each case record was also looked for full details of symptoms at presentation and age at diagnosis.

The health record of 75 children who were known not to have ADHD and were seen in the same area for school, medical or other reasons during the study period, were taken as control.

Results

In our study, 28% of the children with ADHD had sleeping problems during infancy, while only 4% had sleeping problems in the control group. Feeding problems were present in 12% of the babies who were subsequently diagnosed as ADHD. The incidence was much lower in healthy controls (2%). In the ADHD group, 10% of the babies had recurrent colic as compared to 4% in the control group. (Table 1)

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There was developmental delay in 63.5% of the children with ADHD. Speech delay was most common, occurring in 48.6% (12% in control group). Fine motor co-ordination problems were the second most common problems in children with ADHD occurring in 16.2%. Approximately 70% of children with ADHD were noted to have special educational needs; 13.5% were on Level I, 20% on Level II and 36.5% on Level III and above, of the code of practice for special educational needs.

Three quarters of ADHD children were commenced on drug treatment. Approximately 70% of the children received methylphenidate (Ritalin) alone, 5.4% received both methylphenidate (Ritalin) and clonidine, and 24.3% received no drug therapy.

Discussion

The aim of this study was to identify the early markers of ADHD. A significantly higher proportion of ADHD children had sleeping and feeding problems during infancy. These were the babies who had significant problems and reported to the health visitors or attended sleep clinics or feeding clinics administered by health visitors in the area. There was no other pathology to account for such problems. These could be identified as early markers and although these are noted in practice, they are not reported in the literature. These problems however may not be specific for potential ADHD, but may be markers of some other similar behavioral problems in later childhood. Disorder of sleep and circadian rhythm is reported to occur commonly in children with severe neurologic disorders.[3] Higher sleep related problems have also been reported in children 6-12 years.[4] A logical association between physiology of sleep and the presence of sleep related disorders among individuals with ADHD has also been described.[5]

Speech delay was the commonest developmental problem in early childhood, occurring in 48.6% ADHD children (only 12% in control group). Since speech development relates well to hearing and listening, which is an active process, the delay can be attributed to difficulty with focused and sustained attention to the voice and sounds in the environment.

Speech delay has been reported in earlier studies.[1] Fine motor and eye-hand co-ordination problems were the second most common, occurring in 16.2% of the ADHD group and we think it is due to visual perceptual and processing difficulties. About 70% of children with ADHD had some special educational needs, which indicates the scale of the problem in schools.

The usual age at which the diagnosis of ADHD can be made is around 4 years.[6] In the DSM-IV, it is stated that, "in approximately half of the cases, onset of the disorder is before age four." However most children are diagnosed later, at the age of 7-10 years (mean age in our study was 6 years 10 months, range 4 years to 13 years 6 months). At the time of diagnosis, thus majority of children have been in school for a while and are underachieving. Their behavior becomes a challenge for the teachers and a worry for the parents. The children get told-off frequently and may even be punished for their unusual behavior. This may set frustration and low self-esteem in children. Early intervention has been said to be effective in even reducing the incidence of ADHD at school age.[7]

The main symptoms of ADHD displayed are inattention, hyperactivity and impulsivity. These symptoms are also present in sleep deprivation[8] however, their regular occurrence in otherwise normal circumstances should make us think of ADHD, even at an early age. There have been some studies in the United States which found that children with ADHD were more likely to be delayed in onset of talking during early childhood, than normal children.[8,9] They are said

Table 1 - Infancy and early childhood problems in ADHD children

	ADHD n=74	Control n=75	Odds Ratio	95% CI
Sleeping Problem	21(28%)	3(4%)	9.5	2.7-33.5 *
Feeding Problem	9(12%)	2(2%)	5.1	1.1-24.2 *
Recurrent Colic	8(10%)	3(4%)	2.9	0.7-11.4
Speech Delay	36(48.6%)	9(12%)	6.9	3.0-16.0 *

* Statistically significant

to be less proficient in their organization of speech and are dysfluent.[10,11]

The early symptoms may cause inappropriate response from the parents which can aggravate the avoidable symptoms. Early treatment can reduce the severity of these symptoms and can help in managing the motor and language difficuilties.[7] It will also better adapt the child to the normal school environment.

Implications for Practice

Early infancy feeding and sleeping problems in otherwise healthy infants, and later speech delay were identified as the early markers for potential ADHD. These children may be identified and followed up by the health visitor, and referred to a pediatrician on suspicion of symptoms. An early diagnosis may be offered and appropriate advice and/or treatment given at this stage, which may not necessarily mean medication, but other types of therapies (cognitive behavioral therapy, family support and family therapy etc). This may help to prevent the frustration, punishment and damage to the self-esteem of the child.

A large prospective study is required to know the evolution of these infants into spectrum of various behavior patterns and to assess the beneficial effects of early intervention.

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