Correspondence of parent and teacher reports in medication trials

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Abstract Although much has been written about the agreement of parents and teachers regarding the diagnosis of attention-deficit/hyperactivity disorder (ADHD), some uncertainty remains about their agreement when assessing change during drug treatment. To address this issue, we analyzed data from a placebo-controlled short-term study and an open-label long-term study of ADHD children treated with OROS® methylphenidate (MPH). Both reporters agreed that OROS® MPH was efficacious for symptoms of inattention/overactivity and oppositionality/defiance and that the effect was greater for inattention/overactivity than oppositionality/defiance. Thus, in clinical trials, having two reports may not be absolutely essential for assessing the efficacy of ADHD medications. We also computed diagnostic efficiency statistics and found a high probability that parents would confirm teacher reports of therapeutic improvement and a somewhat lower probability that teachers would confirm parent reports of therapeutic improvement. In contrast, neither reporter was likely to confirm the other reporter’s report of no improvement or worsening. Thus, when given a report of no improvement from one setting, clinicians cannot be certain about clinical status in the other setting. For symptoms of oppositionality and defiance, we also saw that parent-teacher agreement about improvement was better than agreement about lack of improvement. However, for these symptoms, teacher reports were somewhat better predictors of parent reports than vice-versa.

Key words ADHD – parent-teacher reports – medication trials

Introduction

Attention-deficit/hyperactivity disorder (ADHD) affects 3%–9% of school-age children and is diagnosed in as many as half of all child mental health referrals (Arnold et al. 1995). The core symptoms of ADHD (inattention, hyperactivity, and impulsivity) (Barkley 1990) often give rise to significant functional problems, such as school difficulties, academic underachievement, troublesome interpersonal relationships with family members and peers, and low self-esteem (Mannuzza et al. 1989; Barkley et al. 1996; Greene et al. 2001; Biederman et al. 2002a).

Originally thought of as a childhood disorder, numerous follow-up studies show that ADHD persists into adolescence and adulthood in a significant number of cases (Faraone et al. 2000a, b). By mid-adolescence, ADHD children exhibit impaired academic functioning, perform poorly on cognitive tasks, and often develop additional conduct problems leading to involvement with the criminal justice system. Older patients are at in-
creased risk for traffic accidents and substance abuse (Barkley 1993, 1996; DHHS 1999).

ADHD has always been recognized as a disorder with childhood onset. Diagnostic criteria in DSM-III-R and the present DSM-IV specify an age of onset by 7 years. Unlike DSM-III-R, DSM-IV requires symptomatology to be present in two or more settings (usually home, school or work), thus ensuring that the disorder will be pervasive rather than merely situational. DSM-IV also emphasizes the requirement for clinically significant impairment in social, academic, or occupational functioning. Although DSM criteria do not require input from multiple informants, some guidelines urge clinicians to seek both parent and teacher reports of symptoms (Loeber et al. 1991; AAP 2000). These guidelines are based on studies which show low agreement between teachers and parents on the presence or absence of ADHD symptoms (Rutter 1982, 1988). Clinicians typically obtain symptom descriptions from parents and teachers in an open-ended clinical interview or by using rating scales such as the Conners Parent and Teacher Rating Scales (Goyette et al. 1978) and the Child Behavior Checklist (Achenbach 1991).

Others have argued that requiring teacher reports for diagnosis places an undue burden on clinicians (Biederman et al. 1990, 1993). Gathering information from teachers is often problematic. They may not be able to complete rating scales for a variety of reasons, including their own workload. Adolescents typically have multiple teachers, none of whom know the child very well. Furthermore, when children present for treatment during the summer, teacher reports are not available. Moreover, in some cases, the child’s parents may not want school personnel to be aware of the child’s assessment for ADHD. In these situations, clinicians must rely on parental reports.

There is a substantial body of literature showing modest agreement between these two traditional sources of information (Achenbach et al. 1987). Several studies have reported on the informativeness of parental reports in the diagnosis of ADHD youth (Touliatos and Lindholm 1981; Biederman et al. 1990, 1993; Verhulst et al. 1994; Zeiner 1997; Mitsis et al. 2000). In general, these studies have reported low to moderate correlations for parent and teacher reports of individual symptoms, which has been interpreted as indicating that parents and teachers observe the child in different settings, and so report different behaviors. However, several of these studies (Biederman et al. 1990, 1993; Zeiner 1997) have found a high positive predictive power (PPP) (the probability that the symptoms reported by the teacher fulfill ADHD diagnostic criteria given that the parent report fulfills diagnostic criteria for ADHD). This suggests that clinicians could have a reasonable degree of certainty that a diagnosis made by parental report would be confirmed by teacher report, if available.

Although many studies have addressed the issue of parent-teacher agreement for the diagnosis of ADHD, few have examined their agreement for assessments of change during treatment. Some data suggest that parents and teachers are both able to detect efficacy during clinical trials (Faraone and Biederman 2002; Biederman 2002), but little is known about levels of agreement during titration or maintenance treatment. Research shows that monitoring response to medication helps achieve optimal symptom control (MTA 1999), and, although information from both parents and teachers would be ideal, the problems described above may hamper efforts to obtain teacher reports.

In summary, although the issue of parent-teacher agreement has been extensively studied regarding the diagnosis of ADHD, the issue of whether reports from teachers are essential for assessing the degree of symptom change during treatment has received scant attention. This issue concerns clinicians because multiple sources of information are useful, but, as previously discussed, obtaining information from teachers can be difficult. From a practical perspective, clinicians need to know the degree of correspondence between parent and teacher reports when assessing the outcome of treatment for ADHD. The issue is also relevant to clinical trials research. Requiring both reports as efficacy measures increases the cost of studies and may threaten generalizability if patients without cooperative teachers must be excluded. To address these issues, we examined parent-teacher agreement for measures of change collected during two studies with an OROS® formulation of methylphenidate (OROS® MPH), a long-acting stimulant treatment for ADHD (Wolraich et al. 2001; Wilens 2002; Wilens et al. 2003).

**Subjects and methods**

Data were analyzed from two studies examining ADHD symptoms among ADHD children treated with OROS® MPH. The short-term multicenter study (Wolraich et al. 2001) was designed to determine the safety and efficacy of OROS® MPH in the community setting. The long-term study (Wilens 2002; Wilens et al. 2003) represents an extension of this (and two other) multicenter studies designed to systematically and prospectively evaluate the effectiveness and tolerability of OROS® MPH administered openly over a period of up to 24 months.