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EDITORIAL

Is there potential for the treatment of children with ADHD beyond psychostimulants?

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The past decades have seen a tremendous rise in the use of methylphenidate in children and adolescents. While the overall prevalence of psychotropic drug use in children and adolescents in the Netherlands doubled between 1995 and 2001, that of methylphenidate alone almost rose sixfold in those years [1]. Between 2001 and 2006, a further large increase was observed in the prescription rates of methylphenidate, not only in children and adolescents but also in adults [2]. While rates of methylphenidate use are still clearly highest amongst boys aged 6–11 years, the most rapid increase in prevalence rate of methylphenidate use has actually been seen in girls. Between 1996 and 2006 this has risen more than 11.5-fold in girls, according to a pharmacoepidemiological study conducted in the North of the Netherlands [3]. To put this into perspective: the latter study pointed out that the use of methylphenidate in girls in 2006 was almost double that of boys back in 1996.

The increased use of methylphenidate contrasts with the lack of long term data on safety and effectiveness. Much of our knowledge about treatment periods of longer than a year comes from following up one study, the Multimodal Treatment of attention deficit/hyperactivity (ADHD) study (MTA) study. Although it should not be forgotten that all MTA data beyond the initial controlled period of 14 months has been strictly observational, so far long term benefits of optimized and well controlled methylphenidate treatment during a limited period of time of 14 months have been hard to demonstrate [4]. Thus, while on one hand, there are clear short-term benefits of methylphenidate for the treatment of ADHD, the uncertainty of long term benefits and risks remains an urgent challenge for the scientific and clinical community.

What promise may alternative treatments offer for children with ADHD? Food-based interventions may be one option. In 2009, this Journal had published promising effects of a restricted elimination diet in reducing symptoms of ADHD versus a waiting list control group [5]. Results were recently confirmed in a larger scale Lancet study by the same group of investigators, in which there was a control group that received instructions for a healthy diet [6]. However, the difficulty of establishing a truly blinded control intervention constitutes perhaps the biggest design challenge in trying to more firmly demonstrate the efficacy of food-based treatments for ADHD. Ideally, well-designed and controlled replication studies should be conducted by independent groups who did not develop the intervention themselves.

Another alternative treatment option that has now seen a number of randomized controlled trials is electroencephalogram (EEG)-based neurofeedback. This issue (Bakhshayesh et al.) contains a small-scale, but elegantly designed randomized controlled trial of EEG neurofeedback versus a sham condition (biofeedback aimed at forehead muscle relaxation). Importantly, children and parents were not explicitly informed about the two treatment conditions. Results indicated both specific effects of EEG neurofeedback (reduction of inattention symptoms on parent rating scales and reaction time in neuropsychological tests), as well as non-specific factors (regarding hyperactivity and impulsivity), which were similarly improved in the children receiving the sham treatment.

Another study in this issue (Benjet et al.), using an epidemiological approach (based on interview data of more

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than 3,000 adolescents from the Mexican Adolescent Mental Health Survey) once more reminded us that it is not all genetics and neurobiology that determines mental disorders. Rather, it pointed to the important role of family dysfunctioning for the development of psychopathology. As the authors conclude, their study findings at least indirectly provide further evidence for the importance of family focused intervention and prevention efforts.

With the ever rising prescription rates of methylphenidate, all too easily impressions of overtreatment rather than undertreatment of ADHD in children may arise. However, many children with impairing ADHD still receive no proper treatment [7]. Thus, effective and easy-to-implement screening questionnaires that can identify those children who are at risk of having ADHD or other behavioral disorders are crucial. The Strengths and Difficulties Questionnaire (SDQ) is one well-known example of a brief screening instrument. Ullebø and colleagues [8] in this issue describe that already the use of the 5-item-only SDQ hyperactivity- inattention subscale has adequate sensitivity for detecting ADHD combined subtype.

Are we overtreating children with methylphenidate? There may be both over- and undertreatment. It remains an enormous challenge for the scientific community to more precisely establish the long-term risks and benefits of methylphenidate treatment and also to determine in which cases treatment with psychostimulants or alternative treatments are warranted. Well-designed studies involving alternative treatments remain urgently needed.

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