Attention deficit hyperactive disorder

Attention deficit hyperactive disorder (ADHD) is one of the most common childhood disorders and can continue through adolescence and adulthood. Symptoms include difficulty staying focused and paying attention, difficulty controlling behavior, and hyperactivity (over-activity).

ADHD has three subtypes:

Predominantly hyperactive-impulsive Most symptoms (six or more) are in the hyperactivity-impulsivity categories. Fewer than six symptoms of inattention are present, although inattention may still be present to some degree.

Predominantly inattentive The majority of symptoms (six or more) are in the inattention category and fewer than six symptoms of hyperactivity-impulsivity are present, although hyperactivity-impulsivity may still be present to some degree. Children with this subtype are less likely to act out or have difficulties getting along with other children. They may sit quietly, but they are not paying attention to what they are doing. Therefore, the child may be overlooked, and parents and teachers may not notice that he or she has ADHD.

Combined hyperactive-impulsive and inattentive Six or more symptoms of inattention and six or more symptoms of hyperactivity-impulsivity are present. Most children have the combined type of ADHD.

Significant positive associations between lifetime traumatic brain injury (TBI) and both current and past ADHD were observed among adults in this population. More research to understand these associations, and their significance for the etiology and management of TBI and ADHD, is needed [1].

Case series

2016

A study investigated whether treatment naïve adults with Attention Deficit Hyperactivity Disorder (ADHD; n = 33; 19 female) differed from healthy controls (n = 31; 17 female) in behavioral performance, event-related potential (ERP) indices of preparatory attention (CueP3 and late CNV), and reactive response control (Go P3, NoGo N2, and NoGo P3) derived from a visual cued Go/NoGo task. On several critical measures, Cue P3, late CNV, and NoGo N2, there were no significant differences between the groups. This indicated normal preparatory processes and conflict monitoring in ADHD patients. However, the patients had attenuated Go P3 and NoGoP3 amplitudes relative to controls, suggesting reduced allocation of attentional resources to processes involved in response control. The patients also had a higher rate of Go signal omission errors, but no other performance decrements compared with controls. Reduced Go P3 and NoGo P3 amplitudes were associated with poorer task performance, particularly in the ADHD group. Notably, the ERPs were not associated with self-reported mood or anxiety. The results provide electrophysiological evidence for reduced effortful engagement of attentional resources to both Go and NoGo signals when reactive response control is needed. The absence of group differences in ERP components indexing proactive control points to impairments in specific aspects of cognitive processes in an untreated adult ADHD cohort. The associations between ERPs and task performance provided additional support for the altered electrophysiological responses [2].

A study was performed in an emergency department on children admitted between 2009 and 2013. It compared victims of mild head injury aged 6-16 years with matched children presenting isolated non-surgical forearm fracture (ratio1/2). ADHD was assessed using Conners' Global Index-Parent short version 3-40 months after the trauma. The patients were compared using chi-square test or Fisher's exact test, t test or u-test as appropriate with a p value set at 0.05.

During the study period, 676 patients were admitted for mild head injury. Among them, 34 (5 %) fulfilled the inclusion criteria and were compared with 64 matched patients admitted for a forearm fracture. The groups were comparable. ADHD was observed in both groups (18 % in the mild head injury group, 11 % in the control group) with no significant differences between groups. The prevalence was high when compared to an expected frequency of 3.5-5.6 % in children aged 6-12 years in the general population.

These results suggest that pre-existing ADHD may have contributed to injury proneness in both groups and does not argue for a specific risk of ADHD induced by mild head injury. The diagnosis of ADHD should be evoked at admission of children aged 6-16 years presenting with a trauma [3].

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