Right Hemisphere Dysfunction in Subjects With Attention-Deficit Disorder With and Without Hyperactivity

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Abstract

The attention-deficit disorder, with and without hyperactivity, is associated with defective attention, response inhibition and, in attention-deficit disorder with hyperactivity, with motor restlessness. In adults, inattention, defective response inhibition, and impersistance are more commonly seen in right hemisphere lesions. In the present study, we investigate possible right hemisphere dysfunctions in attention-deficit disorder with hyperactivity and attention-deficit disorder without hyperactivity. The right hemisphere performance of 60 teenagers, 16 having attention-deficit disorder with hyperactivity, 9 having attention-deficit disorder without hyperactivity, and 35 controls, selected clinically (DSM-III) and experimentally (through Continuous Performance Test and Paced Auditory Addition Task), with normal IQ was assessed using a wide-ranging battery of visuospatial, visuoperceptive, and visuoconstructive functions (Benton's Line Orientation, Benton's Visual Retention, Raven's Progressive Matrices, Wechsler Adult Intelligence Scale [WAIS] Block-Design, Rey's Complex Figure). Teenagers with attention-deficit disorder with and without hyperactivity performed significantly worse than controls. Greater differences were found between subjects with attention-deficit disorder without hyperactivity and control than between subjects with attention-deficit disorder with hyperactivity and control subjects. Our results seem to be consistent with right-hemisphere dysfunction, especially in subjects with attention-deficit disorder without hyperactivity. Additionally, WAIS Block-Design and Benton's Line Orientation are the visuospatial tests with the highest discriminant power to differentiate between controls, subjects with attention-deficit disorder without hyperactivity, and subjects with attention-deficit disorder with hyperactivity. (J Child Neurol 1997;12:107-115).