Retinal Contrast Transfer Functions in Adults with and without ADHD

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Abstract

In previous studies, we found a strong reduction in contrast perception and retinal contrast gain in patients with major depression, which normalized after remission of depression. We also identified a possible role of the dopaminergic system in this effect, because visual contrast perception depends on dopaminergic neurotransmission. Dopamine is also known to play an important role in the pathogenesis of attention deficit hyperactivity disorder (ADHD). Therefore, in order to explore the specificity of retinal contrast gain as a marker of depression in comparison with other psychiatric diseases, we recorded the pattern electroretinogram (PERG) in patients with ADHD. Twenty patients diagnosed with ADHD and 20 matched healthy subjects were studied. Visual pattern electroretinograms were recorded from both eyes. The contrast gain of the patients with attention deficit disorder (ADD) did not differ from the control group, nor did the contrast gain of any ADHD subgroup (predominantly inattentive or combined patients). In the healthy subjects, a significant correlation between depression score and contrast gain was found. As the contrast gain in an earlier study clearly separated the patients with depression from the controls, we assume that retinal contrast gain might be a specific marker in depression.