Gender differences in anomalous subcortical morphology for children with ADHD.


Abstract

Although studies showed subtle reductions in brain volume in fronto-striatal regions in children with ADHD, there have been limited investigations of volume and lateralization in subcortical structures and a paucity of exploration of the influence of gender on these findings. This study aims to examine morphology of subcortical structures and their association with ADHD symptoms in boys and girls as compared to their typically-developing (TD) peers. One hundred and eighty five children aged 7-14 years with and without ADHD were included from ADHD-200 Consortium. Results showed that compared to TD boys, boys with ADHD had reduced accumbens, amygdala and hippocampus volumes. There were no volumetric differences in any structure between ADHD and TD girls. Asymmetry analysis revealed right lateralization compressions within the thalamus in ADHD boys relative to TD boys. The findings suggest a gender dimorphic pattern of differences in subcortical structures in children with ADHD, and a possible neurobiological mechanism where boys with ADHD demonstrate increasing difficulties with hyperactivity/impulsivity.