Cingulate Cortical Thickness and Dopamine Transporter (DAT1) Genotype in Children and Adolescents With ADHD

Alberto Fernández-Jaén; Jacobo Albert; Daniel Martín Fernández-Mayoralas; Sara López-Martín; Ana Laura Fernández-Perrone; Mar Jimenez de la Peña; Beatriz Calleja-Pérez; Manuel Recio Rodríguez; Sonia López Arribas

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Abstract

Objective:
This study aimed to examine the influence of dopamine transporter gene (DAT1) 3'UTR genotype on cingulate cortical thickness in a large sample of children and adolescents with ADHD.

Method:
Brain MRIs were acquired from 46 ADHD patients with homozygosity for the 10-repeat allele and 52 ADHD patients with a single copy or no copy of the allele. The cingulate cortex of each MRI scan was automatically parceled into sulci and gyri as well as into Brodmann areas (BA).

Results:
There were no group differences in age, gender, full-scale intelligence quotient, symptom severity, treatment status, comorbidity, or mean overall cortical thickness. Sulcus/gyrus- and BA-based analyses revealed that patients homozygous for the 10-repeat allele showed significantly greater thickness in right cingulate gyrus and right BA 24 compared with 9-repeat carriers.

Conclusion:
These findings suggest that thickness of cingulate cortex is influenced by the presence of the 10-repeat allele in ADHD.