P01-188 - **REGIONAL BRAIN PERFUSION DIFFERENCES ASSOCIATED WITH NOREPINEPHRINE TRANSPORTER GENE POLYMORPHISMS IN ADHD**

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Objectives: The aim of this study was to examine whether the presence of risk alleles of the norepinephrine transporter gene (SLC6A2) polymorphisms is associated with differences in regional cerebral blood flow (rCBF) measured by ^{99m}Tc-HMPAO single photon emission computerized tomography in a Korean sample of ADHD.

Methods: The present study included 24 children with ADHD (9.5±2.4 years), consisting of 20 boys and 4 girls, aged 6-16 years. We investigated the G1287A and -3081(A/T) polymorphisms of the SLC6A2. The rCBF was compared between the ADHD subjects with and without risk alleles at the G1287A polymorphism and at the -3081(A/T) polymorphism. Image analyses were performed with voxelwise *t*-statistics using SPM2.

Results:

1) The ADHD subjects with the A allele (risk allele) at the G1287A polymorphism showed reduced perfusion in the left middle frontal gyrus, left inferior parietal lobule, precuneus, right superior frontal gyrus, and right superior parietal lobule as compared with ADHD subjects without the A allele ($p < 0.001$).

2) The ADHD subjects with the A allele at the G1287A polymorphism showed increased perfusion in the right middle frontal gyrus, right middle temporal gyrus, right superior temporal gyrus, right fusiform gyrus, right precentral gyrus, and right anterior lobe of cerebellum as compared with ADHD subjects without the A allele ($p < 0.001$).

3) No significant perfusion differences were found between ADHD subjects with and without the T allele (risk allele) at the -3081(A/T) polymorphism.

Conclusion: Our findings suggest that the SLC6A2 G1287A polymorphism might exert differential effects on rCBF in children with ADHD.

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