

P-796 - ASSESSMENT OF ALTERATION IN WHITE MATTER INTEGRITY IN SCHIZOPHRENIA FOLLOWING ADMINISTRATION OF CLOZAPINE: TRACT-BASED SPATIAL STATISTICS OF DIFFUSION TENSOR IMAGING

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Introduction: Several diffusion tensor imaging (**DTI**) studies have shown disturbed white matter integrity in various brain areas in schizophrenia patients compared to controls, while studies investigating the effects of antipsychotics on white matter integrity is scarce, and the effect of clozapine on DTI measures have not yet been studied.

Objective: The purpose of this study was to investigate the influence of clozapine on white matter integrity in patients with chronic schizophrenia by using Tract-Based-Spatial-Statistics (TBSS).

Methods: DTI of sixteen patients with schizophrenia (M/F: 10/6) were performed before the initiation, and at 3rd month of clozapine treatment using a 1.5 T MR scanner (Magnetom TIM, Siemens, Germany). A voxelwise statistical analysis of fractional anisotropy (FA) maps was carried out using TBSS, part of the FSL software package. Voxelwise statistics on the skeletonised FA data was computed at a threshold level of $p < 0.05$. White matter structures with significant group differences in FA were extracted as ROIs, registered to and overlaid onto an anatomical template and labelled using the MRI Atlas of Human White Matter.

Results: TBSS-DTI revealed significant increases in FA after 3 months of clozapine administration in bilateral, but predominantly right hippocampus, genu and splenium of the corpus callosum, fornices, frontal, parietal and temporal white matter.

Conclusion: To our knowledge this is the first study to show that clozapine treatment resulted in a widespread increase in FA, indicative of improved white matter integrity. Clozapine may exert its effects by improving intra- and interhemispheric connectivity among cortical and subcortical regions.