
WHITE MATTER CHANGES IN MULTI-EPISODE SCHIZOPHRENIA: A LONGITUDINAL DIFFUSION TENSOR IMAGING STUDY

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Background

The aim of this study was to detect longitudinal differences in white matter brain structures in adults with schizophrenia compared to healthy controls.

Methods

Twenty adult patients with multi-episode schizophrenia under stable antipsychotic medication and twenty-two age- and sex-matched healthy subjects were included in the study. Diffusion Tensor Imaging (DTI) was applied at baseline (t1), after 6 weeks (t2) and after 3 months (t3) and data processing was done with tract-based spatial statistics ($p < 0.05$, corrected). Two subjects in the schizophrenic sample dropped out at t2 and one healthy subject at t3. Clinical and neuropsychological variables were measured and correlated with the most significant DTI findings.

Results

Compared with healthy age- and sex-matched controls schizophrenic patients showed widespread decreases in mean fractional anisotropy values ($p < 0.05$, corrected). The most obvious FA decrease in the long-term was found in the anterior part of the corpus callosum ($p < 0.005$, corrected), the left temporal lobe ($p < 0.004$, corr.) and the mid-cingulate gyrus bilateral ($p < 0.004$, corr.). Correlations to demographic variables, clinical rating scales (PANSS, CGI and GAF), verbal learning and memory and working memory will be presented.

Conclusion

Magnetic resonance imaging was able to detect altered structural connectivity in patients with multi-episode schizophrenia in a longitudinal design.