

## S34-03 - DIFFUSION TENSOR IMAGING ANALYSES OF TWINS WITH AND WITHOUT SCHIZOPHRENIA

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DTI studies in schizophrenia have consistently reported decreased fractional anisotropy (FA, an index of white matter microstructure) in patients. There is little evidence as to the genetic or environmental determinants of this difference however. Studies of twins with schizophrenia allow us to estimate these influences. We report a cross-sectional case control study of twins with and without schizophrenia.

We recruited mono- and di-zygotic twins concordant and discordant for DSM schizophrenia from across the United Kingdom, referred by their treating psychiatrists. We recruited healthy control twins from the Institute of Psychiatry Volunteer Twin Register and by national media advertisements. Clinical diagnoses were confirmed using the Schedule for Affective Disorders and Schizophrenia-Lifetime Version (Spitzer and Endicott, 1978). Zygosity was confirmed by DNA analysis. Eleven pairs of monozygotic twins concordant for schizophrenia, 10 pairs of monozygotic and seven pairs of dizygotic twins discordant for schizophrenia, 24 pairs of healthy monozygotic twins and 20 pairs of healthy dizygotic twins were recruited.

Subjects were scanned with an optimized DTI sequence at 1.5T. Scans were warp-corrected, masked, and FA calculated at each voxel. FA maps were then co-registered to a study-specific FA template using SPM2 and group differences calculated on segmented white-matter FA maps using non-parametric XBAM\_v3.4.

Results are presented of analyses comparing twins with schizophrenia with their well co-twin, linear trend analyses comparing healthy controls with well di and mono-zygotic co-twins, and a heritability analysis of the healthy controls.