Moreover, we observed a great variability of link density during resting state in patients but not in controls, and it diminishes in response to task.
Discussion: Patients present abnormalities in networks related to stress response showing an alteration in fronto-temporal connectivity, and a poor and random modulation of these networks at rest. Current and previous findings suggest abnormal fronto-temporal connectivity that ultimately would lead to psychotic symptoms emergency in response to an environmental stressor and, even, could be related to hypervigilance and misattribution feeding into the paranoid cognition characteristic of patients with schizophrenia.

F170. SCHIZOPHRENIA POLYGENIC RISK SCORE ASSOCIATED WITH LEFT TEMPORAL GYRIFICATION

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Background: Brain structural changes in schizophrenia are thought to arise in part from genetic liability, as shown in studies of twins and siblings. Polygenic risk scores (PGRS) derived from large-scale genome-wide association studies (GWAS) have allowed to use measures of genetic liability calculated from large numbers of individual single nucleotide polymorphisms (SNPs). Initial studies on PGRS and structural imaging have, however, failed to provide clear associations. We used three separate measures of brain morphometry (voxel-based morphometry, cortical thickness, and gyrification) in a sample of healthy subjects to associate them with PGRS for schizophrenia in order to test the hypothesis that gyrification, a putative indicator of early brain development.
Methods: We analysed high-resolution MRI scans (3 Tesla, T1-weighted MPRAGE, 1x1x1mm resolution) from n=153 healthy subjects with not current or previous psychiatric condition recruited from the local community. DNA from each subject was analysed using the PsychChip, and polygenic risk scores were calculated for schizophrenia, as well as bipolar disorder and major depression (for assessment of relative specificity of the schizophrenia PGRS). MRI data were pre-processed with the CAT12 toolbox (dbm.neuro.uni-jena.de/cat12) for analysis using a) voxel-based morphometry (VBM), b) cortical thickness, and c) gyrification (calculated using the absolute mean curvature approach (Luders et al., NeuroImage 2006). We initially used $p<0.001$ uncorr. on the peak-level and performed correction for multiple-comparisons on the cluster level.
Results: We found a negative correlation of the schizophrenia polygenic risk score with gyrification in the left anterior superior cortex (i.e. the higher risk score loading the lower local gyrification), which was significant at the cluster-level for FWE correction ($p<0.047$). There was not such significant finding for positive correlations, nor for any of the VBM or cortical thickness analyses. Also, there was not significant association (positive or negative) with major depression or bipolar disorder PGRS in any of the three morphometry analyses.
Discussion: Our findings suggest that SNP-based genetic risk for schizophrenia is associated with left temporal gyrification, a putative indicator of early brain development, which again might be affected by multiple schizophrenia risk genes regulating cortical formation and connectivity. Furthermore, our findings are consistent with the notion of specificity for both morphometric marker (i.e. gyrification, but not VBM or cortical thickness) as well as diagnosis (with negative findings for major depressive and bipolar disorder risk scores). PGRS might impact on early developmental markers of brain structure (and possibly function), rather than overall liability-related variance.

F171. ALTERED DIFFUSIVITY IN THE BRAIN OF PATIENTS WITH SCHIZOPHRENIA: A DIFFUSION WEIGHTED MAGNETIC RESONANCE IMAGING STUDIES WITH PUBLIC NEUROIMAGING DATA

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Background: In recent decades, numerous in vivo brain imaging studies utilizing diffusion weighted MRI (dMRI) technique have focused on altered diffusivity in brains of patients with schizophrenia. However, the literature has not reached at consistent consensus despite a few interesting and promising results. In this study, we investigated whether or not various measures of dMRI (FA, AD, RD, and TR) are altered in patients with schizophrenia by comparing them in both patients and healthy controls with public neuroimaging data from SchizConnect (http://schizconnect.org).
Methods: The final data set was consisted of 121 schizophrenia patients and 119 healthy controls. After verifying 161 anatomical regions of interest (ROIs), we estimated the mean value and standard deviation of fractional anisotropy (FA), axial diffusivity (AD), radial diffusivity (RD), and trace (TR) in each ROI among the healthy controls. After that, we calculated the Z-score of each single ROI in every individual brain of both patients and healthy controls. The Z-score information of each person is then integrated into two location-independent measures. One is the total number of "abnormal" lesions, in which the absolute Z-score is above the cut-off value estimated by the Bonferroni correction, and the other is the largest absolute Z-score. After all, by using Welch two-sample t-test, we compared these two measures between the groups of patients and healthy controls.
Results: The number of abnormal lesions was notably increased in patients group, in terms of RD ($p=0.01063$) and TR ($p=0.009329$). Meanwhile, no statistically significant differences related to FA and AD were observed. On the other hand, it was found that the largest absolute Z-score was elevated in patients group, in terms of AD ($p=0.03371$), RD ($p=0.0001762$), and TR ($p<0.00001$). Otherwise, no significant differences related to FA were observed.
Discussion: In this study, we found a few remarkable differences of familiar measures, especially TR, between brains of patients with schizophrenia and healthy controls. This suggests that there should be some subtle changes in the brains of patients with schizophrenia, including microstructural destruction.

F172. INDIVIDUAL PREDICTION OF RISK IN ADOLESCENT OFFSPRING OF PARENTS WITH SCHIZOPHRENIA OR BIPOLAR DISORDER: A MACHINE LEARNING NEUROIMAGING STUDY WITH A CROSS-STAGE VALIDATION

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Background: Schizophrenia (SZ) and bipolar disorder (BD) are severe psychiatric disorders that are not easily distinguishable based on clinical measures. Offspring of patients with SZ or BD have a tenfold increased risk of developing the disorder as well as an increased risk for other severe mental disorders. Reliable identification of these subjects might allow for early recognition and intervention, which have been shown to be beneficial for