used to assess group differences longitudinally. We examined the correlation between treatment response and change in hippocampal connectivity. Connectivity analyses were corrected for age as appropriate and corrected for multiple comparisons using voxel height threshold ($p < .05$, uncorrected) and cluster level corrections ($p < .05$, FDR corrected). We then compared Glutamate+glutamine (Glx) between groups at baseline and examined changes in Glx over time.

Results: Hippocampal functional connectivity differed between good and poor-responders in the left dorsolateral prefrontal cortex (DLPFC), temporal parietal junction (TPJ) and right motor cortex. At baseline, hippocampal functional connectivity to the right DLPFC and left TPJ was predictive of subsequent treatment response. A group by time interaction was observed in the left DLPFC where hippocampal connectivity significantly differed between groups as an effect of time. Post hoc comparisons showed that responders had lower connectivity to DLPFC than poor-responders at baseline, while the opposite pattern was seen at week 6. At baseline, there were no significant differences between the groups in Glx. After 6 weeks of treatment, good responders, but not poor responders, showed a significant decrease in Glx ($p<0.02$).

Discussion: Here we found that good and poor responders differed in hippocampus functional connectivity patterns but not neurometabolite levels at baseline. Interestingly, risperidone altered connectivity and decreased Glx only in good responders, but not poor responders. Brain regions that showed functional connectivity alterations in patients at baseline were also predictive of subsequent treatment response. Our data adds to the efforts in unraveling the mechanisms underlying the considerable heterogeneity in schizophrenia, and suggest that treatment response may a useful construct for group stratification. Funding: NIH (RO1MH081014 and RO1MH102951)

T91. NOVEL INFLUENCE OF EARLY-LIFE ADVERSITY ACROSS FUNCTIONAL NETWORKS DURING WORKING MEMORY IN SCHIZOPHRENIA

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Background: Alterations in functional networks during working memory (WM), including the salience network, frontoparietal network, dorsal attention network and default-mode network, have been repeatedly reported in schizophrenia. Changes in functional connectivity related to Early-Life Adversity (ELA) have yet to be characterized despite its relevance in schizophrenia and healthy participants. Furthermore, it remains to be tested if different severity levels of ELA are associated with the recruitment of functional networks during working memory.

Methods: Data were analyzed from 69 healthy controls (HC) and 26 patients with chronic schizophrenia (SZ) matched for sex, IQ, and handedness as part of the 'Immune Response and Social Cognition in Schizophrenia' project. Individuals completed the Childhood Trauma Questionnaire (CTQ) and performed a spatial WM task while undergoing functional MRI in a 3T MRI scanner. We tested for group differences for rescaled total CTQ scores, low ELA severity levels and high ELA severity levels in HC and SZ. Then we compared the impact of ELA severity on the high difficulty level during working memory-related functional connectivity across the whole brain, salience network, frontoparietal network, dorsal attention network and default-mode network, using an a priori region of interest (ROI) to ROI analysis in CONN Toolbox. We report findings that survived $p<0.05$ FDR threshold at the analysis level and multiple comparisons corrections.

Results: SZ reported significantly greater ELA severity than HC ($T(92) = 1.997$, $P < 0.049$), while no significant group difference for a total ELA score was found ($T(92) = 1.821$, $P < 0.072$). We identified significant changes in functional connectivity at the whole-brain level across 164 ROIs, driven by increased negative functional connectivity in frontoparietal brain regions in SZ relative to HC across the whole sample ($T(92) = -3.65$, $P < 0.036$). For all other task-based networks of the salience network, frontoparietal network and dorsal attention network, only HC with low ELA severity levels showed reduced functional connectivity in parts of the networks (salience network, $F(43) = 2.76$, $P < 0.041$; frontoparietal network, $T(46) = 3.28$, $P < 0.039$; dorsal attention network, $F(46) = 4.55$, $P < 0.015$), but not in HC with high ELA severity levels or SZ. Conversely for the task-negative network of the default-mode network, only SZ with high ELA severity levels showed significantly reduced functional connectivity in parts of the network ($T(12) = -3.72$, $P < 0.09$), but not in SZ with low ELA levels or HC.

Discussion: These preliminary results suggest that reduced functional connectivity across networks during WM is a correlate of ELA experience in both HC and SZ, rather than an illness-effect in SZ only. Low ELA severity levels in HC appear to lead to deactivation of task-based networks during WM. In contrast, high ELA severity levels in SZ seem to be related to deactivation in the task-negative network during the WM task. We speculate that these deactivations of networks may reflect a biomarker of ELA experience in healthy participants and patients with schizophrenia.

T92. HIPPOCAMPAL GRAY MATTER VOLUME IS ASSOCIATED WITH COGNITION, POSITIVE SYMPTOMS, AND DURATION OF UNTREATED PSYCHOSIS IN THE FIRST EPISODE SCHIZOPHRENIA SPECTRUM

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Background: Hippocampal volumes are reduced in long-term and early schizophrenia. The hippocampus has an established role in working memory in healthy individuals, and less hippocampal volumes are associated with more severe symptoms in long-term schizophrenia. It remains unclear how hippocampal volumes relate to cognitive deficits, symptom severity, and illness duration early in schizophrenia. Therefore, we investigated relationships between hippocampal gray matter volume, cognitive performance, symptom severity, and duration of untreated psychosis (DUP) in first episode schizophrenia-spectrum individuals (FESz).

Methods: T1-weighted MRI scans were acquired on 33 first-episode (FESz) and 32 matched healthy control (HC) individuals. Freesurfer was used to segment and estimate gray matter volumes in the left and right hippocampus. For group difference comparisons, volumes were normalized to total intracranial content. Cognitive ability was measured by the MATRICS Consensus Cognitive Battery (MCCB). DUP, measured in days, was calculated by taking the difference between the date of their first psychotic symptom and the date they either started antipsychotic medication or their assessment date. The log was taken of DUP to account for the skew of a few individuals with large DUP. Symptoms were rated with the Positive and Negative Syndrome Scale (PANSS). Spearman correlations were used to investigate these relationships.

Results: There were no differences in hippocampal volumes between healthy controls and FESz. In healthy controls, left hippocampus was significantly correlated with composite MCCB ($\rho=0.39$, $p=0.028$), and right hippocampus volume was related to MCCB scores at trend level ($\rho=0.32$, $p=0.079$). Similarly, in FESz, both left ($\rho=0.38$, $p=0.037$) and right ($\rho=0.36$, $p=0.049$) hippocampus volumes correlated with composite MCCB scores. In FESz, both left ($\rho=0.47$, $p=0.015$) and right ($\rho=.49$, $p=0.011$) hippocampus volumes correlated positively with PANSS Positive scores. In addition, both the left ($\rho=0.39$, $p=0.033$) and right ($\rho=0.39$, $p=0.036$) hippocampus correlated positively with DUP.