shown that neurotoxic KYN pathway metabolites were related to more severe depressive symptoms (for instance, [1]), while neuroprotective KYN pathway metabolites like KYNA and the KYNA/KYN ratio were decreased in individuals with depression [2]. This indicates that not only the reduced breakdown from TRP into serotonin and KYN, but also the concentration of KYN pathway metabolites and the relative ratio of these products, which reflects the neuroprotective/neurotoxic potential, might play an important role in the pathophysiology of depression. Finally, overproduced proinflammatory cytokines in depression induce the indoleamine 2-3-dioxygenase (IDO) enzyme, which promotes the KYN pathway, and decreases the activation of the serotonin pathway. Thus, the KYN pathway is an important therapeutic target in depression. In our previous reports [3], we described sex-specific changes in TRP breakdown as well as changes in KYN and the KYN/TRP ratio in association with treatment response as well as inflammatory and metabolic parameters. However, results of treatment effects on KYN pathway metabolites as well as how pathway changes are related to treatment response remain sparse.

Objective: We investigated potential changes of KYN and KYN pathway metabolites in association with therapeutic response of individuals with depression during a rehabilitation program. For this purpose, participants were surveyed before and after a six-week multimodal psychiatric treatment.

Methods: 87 participants were divided into treatment responders and non-responders (48 responders, 39 non-responders; 38 male, 49 female; $M_{age} = 51.09$; $SD_{age} = 7.70$) using scores of psychological questionnaires. KYN pathway metabolites serum concentrations as well as their ratios were collected using high performance liquid chromatography. Changes over time (time of admission (t1) vs. time of discharge (t2)) were calculated using repeated measure analyses of (co)variance and post-hoc pairwise t-tests.

Results: Our results show that non-responders exhibited higher levels of 3-Hydroxyanthralinic acid (3-HAA), nicotinic acid (NA), and 3-HAA/KYN levels, independently of measurement time. NA levels decreased, while 3-HAA levels increased over time in both groups, independently of treatment response.

Discussion: The results indicate that some compounds of the KYN pathway metabolites can be altered through multimodal long-term interventions in association with treatment response. Especially the pathway degrading KYN further down to 3-HAA might be decisive for treatment response in depression. These findings implicate a necessity to clarify the relevance of the KYN pathways and the related inflammatory processes in the etiopathology of depression. Specifically, their changeability through multimodal interventions, which are the common treatment option for depression, should gain more interest in research. Investigating the amount of treatment time needed to elicit changes in the biological underpinnings of depression could lead to a better clinical management and more effective treatment interventions. Moreover, the study highlights the importance of multimodal treatment and thus promotes a more holistic understanding of psychiatric conditions.

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UNVEILING CHOROID PLEXUS AS BIOMARKER FOR MOOD DISORDERS: ITS ROLE ON WHITE MATTER AND COGNITIVE DEFICITS

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Major depressive disorder (MDD) and bipolar disorder (BD) are leading causes of life-long disability [1]. Persistent cognitive impairment even in euthymic phases impacts quality of life [2]. Although both inflammation and white matter (WM) disruption were associated with cognitive impairment in mood disorders [3,4], a comprehensive picture of the underlying biological mechanisms is still missing. Given recent results highlighting the enlargement of choroid plexus (ChP) in mood disorders being correlated with peripheral inflammatory markers [5], the aim of the present study was to investigate the association between ChP volume enlargement, and WM integrity in both MDD and BD patients. Then, since the relevance of cognitive impairments in depressive symptomatology and their association with altered WM integrity, we explored a possible mediation role of WM disruption on the relationship between ChP volume and cognitive deficits. 77 subjects were enrolled (37 with BD, and 40 with MDD). All patients were in depressive phase (with Hamilton Depressive Rating Scale score > 8). Diffusion Weighted Images (DWI) and T1-weighted images were acquired for both samples. ChP was segmented and volume was extracted using FreeSurfer 7.2. Diffusion Tensor images (DTI) correction, analysis, and tensor calculations were carried out with FSL 6.0. Using Tract-Based Spatial Statistics individual tract skeletons were fed into Randomise FSL's tool. We tested for linear effects of ChP volume on Fractional Anisotropy (FA), Mean (MD), Axial (AD), and Radial Diffusivity (RD) across the WM skeleton accounting for the effects of age, sex, lithium treatment, and diagnosis. The effect of ChP volume on six cognitive domains, gathered through Brief Assessment of Cognition in Schizophrenia (BACS) was evaluated. Lastly, we tested moderated mediation models setting diagnosis as moderator, extracted DTI measures as mediators, ChP volume as predictor and verbal fluency (VF) as outcome.

Results suggest that ChP volume negatively associated with FA and positively with MD (only in BD) and RD in a widespread pattern of WM fibers, among them corpus callosum, corona radiata, and cingulate gyrus. Moreover, ChP volume significantly predicted VF with higher volume positively predicting cognitive deficit. Among logistic regression analyses of WM integrity measures on VF, the interaction between diagnosis and FA measures in ChP and between diagnosis and RD always in ChP on VF were significant. Moderated mediation model was significant considering RD as mediator. Data showed a significant interaction between RD and diagnosis on VF: the indirect effect of ChP volume on VF was mediated by RD only in BD.

These data depicted disease-specific biological mechanisms underlying cognitive impairment in BD and MDD. Specifically, diagnosis was found to significantly affect the effect of ChP volume on VF through WM microstructure. This relationship found only in BD suggests a different biological role of ChP in MDD and BD. This adds to the existing literature about the role of WM in cognitive deficit in BD, indicating how the detrimental effect of the increased volume of ChP on WM, due to an altered immune response and increased trafficking of inflammatory-related cells, ultimately manifests clinically as cognitive deficit.

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TWO-MINUTE AUTOMATED SPEECH ANALYSIS: COMPARABLE PERFORMANCE TO BECK DEPRESSION INVENTORY-II IN DISTINGUISHING DEPRESSED AND HEALTHY INDIVIDUALS

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