

schizophrenia like psychosis or mood disorders, are also common. Also pyramidal symptoms, cerebellar dysfunction, speech difficulty or convulsive seizures can be identified.

**Conclusions:** Fahr's syndrome is rare, with a prevalence of <1 / 1,000,000. Diagnose is based on a compatible CT-scan, with clinical features and exclusion of other medical conditions. Nowadays, treatment is limited to a symptomatic support. The goals of further research are to understand the genetics of this disorder which could lead to an effective method for treating and preventing Fahr's syndrome.

**Disclosure:** No significant relationships.

**Keywords:** Fahr's syndrome; Fahr's disease; calcification of basal ganglia

## EPV0892

### Depressive symptoms are correlated with periaqueductal gray matter functional connectivity in migraine

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**Introduction:** Depression is the most common comorbidity of migraine. The brain of migraineurs with depression shows differences compared to migraine only or depression only patients. The comorbidity may affect specific regions such as the periaqueductal gray matter (PAG) which is important in negative emotion regulation and pain modulatory system.

**Objectives:** We hypothesized that the alterations in PAG functional connectivity (FC) may play a role in migraineurs vulnerability for depression.

**Methods:** A resting-state fMRI was conducted with 34 episodic migraine without aura patients and 41 control subjects. All participants were medication free and they did not have any psychiatric or chronic disorders. Depressive symptoms were measured with Zung Self-Rating Depression Scale. To investigate the relationship between depressive symptoms and PAG functional connectivity, Zung scores were used as covariates in each groups' PAG-FC analysis using the Statistical Parametric Mapping (SPM12) toolbox in MATLAB environment.

**Results:** There were no significant difference between migraine and control group in Zung scores ( $p=0.394$ ). Negative correlation was found between Zung scores and PAG-FC with thalamus, fusiform gyrus, middle occipital gyrus and calcarine ( $p_{FWE}<0.05$ ) in migraine group. However, there was no significant correlation between Zung scores and PAG-FC in healthy control group.

**Conclusions:** Our results suggest that PAG-FC with emotion and pain processing areas is affected by depressive symptoms in

migraine patients, but not in healthy controls. Migraine patients without comorbid depression might have vulnerable neuronal pathways for depressive symptoms. A follow-up of these patients could be interesting to determine whether these connectivity alterations predict the possible comorbid depression.

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**Keywords:** fMRI; migraine; depressive symptoms; PAG

## EPV0893

### MRI Analysis: Optimization of parameters for diffusion MRI to enhance hippocampal subfield analysis and segmentation (Preliminary Data)

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**Introduction:** The hippocampus is an important, complex limbic structure anatomically embedded in the medial temporal lobe of each cerebral cortex, which has been implicated in the pathogenesis of neuro-inflammatory disease conditions. Few studies have focused on the characterization of the MRI neuroimaging signatures of highly physio- pathologically relevant subfields of the hippocampus (CA1, CA4-DG, CA2/CA3, SLRM).

**Objectives:** Using self-guided manually segmented, Diffusion weighted and NODDI maps created from data obtained from the Human Connectome Project (HCP) we intend to test whether Diffusion MRI-based quantitative imaging parameters (MD, FA, ODI, ISOVF, ICVF), indicative of microstructural characteristics of major hippocampal subfields (CA1, CA2/CA3, CA4-DG and SLRM), correspond to predictions for animal literature and imaging-histology correlations. We will also explore the correlations between these parameters and age.

**Methods:** We used images from the Public connectome data (updated April 2018), exploring subjects with the 3T MRI sessions obtainable from the WU-Minn HCP Data section. For the purpose of this study, we selected and downloaded 10 preliminary imaging data (6 females and 4 males) based on age variability in the following ranges (26-30, 31-35 and 36+). We manually segmented, and computed quantitative parameters.

**Results:** Converging and consistent literature allude to decreasing volumes with increasing age. Analyzing the volumes from the diffusion maps (pilot data), this was also the case, with volumes computed from CA1 and DG-CA4 sub regions. IQT also allowed for better appreciation of neuroanatomical boundaries and land marks, hence allowing more regions to be easily manually segmented (addition of CA2/CA3).

**Conclusions:** Application to Neuroinflammatory imaging data.

**Disclosure:** No significant relationships.

**Keywords:** Hippocampus; Neuroimaging; IQT; Neuroscience