Synopsis for EU-GEI WP5 Publication

Synopsis no.: S5.8

Preliminary title: Structural Abnormalities in the Neural Circuitry of Emotion – A Prelude to Psychosis?"

Contact info for the person(s) proposing the synopsis

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Publication category: 3
Publications from a single work package involving only some parties (or in some cases only one party) in the Work Package

Working and writing group: Gemma Modinos, Philp McGuire and other interested parties from WP5

Work Packages involved: WP5

EU-GEI Partners involved from whom candidate co-authors (*additional to working and writing group*) should be nominated: IoP and other interested centres within WP5

Objectives (scientific background, hypothesis, methods, and expected results):

Neuroimaging studies in the ARMS have reported abnormalities in key regions of the neural circuitry underlying emotional processes (i.e., amygdala, anterior cingulate, prefrontal and insular cortex). These findings are important because the brain changes may be critical for identifying subjects who are destined to become psychotic. If this were true, it would mean that: 1) brain structural abnormalities in the neural emotional circuitry are present before illness onset, 2) that they relate to symptom levels and emotional processing abilities and, 3) most importantly, that they are associated with psychosis onset. The purpose of this study is to evaluate the relative merits of these three predictions regarding brain structure and psychosis in subjects at high risk.

Data needed for the study: (please list the EU-GEI WP5 instruments):
-Basic demographics eg age, gender, years of education
-Structural Magnetic Resonance Imaging,
- CAARMSPlus (baseline and one year follow-up including time of any episodes)
- Degraded facial affect recognition (computer-based task).
- Neuropsychological and environmental variables will be used as predictor and moderator variables in the analyses (i.e., FIGS, Treatment information, Shortened WAIS, Cannabis questionnaire).
-The critical outcome variables will be the presence of psychosis after twelve months of follow-up and the date of any episodes.

Plan for statistical analysis (overall strategy):
Voxel-Based Morphometry (VBM) has been effectively applied to subjects with an ARMS, and will be used to investigate structural differences between ARMS and controls, and associations with levels of positive/negative symptoms and emotion processing abilities. Regression analyses will investigate associations between MRI data and one-year clinical outcomes.

Other analyses/methods: N/A
Involvement of external Parties (non EU-GEI): N/A
IPR check (Intellectual property rights): N/A
Timeframe: Start date: Once WP5 data has been collected and and initial data cleaning is complete Analysis: 4 months Write up: 2 months
Additional comments: Note from MK in WP5 publication committee: to avoid overlap with other projects this proposal will look at VBM baseline MRI data in relation to clinical outcome restricted to its modulatory effect on the network identified **in** relation to emotion processing abilities (ie brain structures associated with degraded facial affect recognition).