Synopsis for EU-GEI WP5 Publication

Synopsis no.: S5.12

Preliminary title: Cortical thickness in the at risk mental state, a prospective multicentre study

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: Matthew Kempton, Stefan Borgwardt, Philip McGuire and other parties contributing useable MRI data from WP5

Work Packages involved: WP5

EU-GEI Partners involved from whom candidate co-authors (*additional to working and writing group*) should be nominated: All centres that have collected MRI data which is of a sufficient standard to be included in the publication.

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

The overall objective is to use examine baseline cortical thickness in ARMS and CONTROLS in across WP5 using FreeSurfer

The main specific objectives are:

1) To compare cortical thickness in ARMS vs Controls in centres that have collected control data (Amsterdam, London, Melbourne)
2) To compare cortical thickness in ARMS-NT vs ARMS-T across all centres that have collected structural MRI data.
3) As the numbers of ARMS-T are likely to be small to conduct a complementary analysis examining follow-up GAF measures in relation to cortical thickness
4) Using data from traveling heads to examine the heterogeneity of the MRI data with relation to centre

A cortical vertex analysis using appropriate statistical correction for multiple comparisons would be conducted in addition to a region of interest approach of the insula and hippocampus.

The central focus would be on transition status and GAF, while a limited number of basic clinical variables would be examined, we are keen not to cover too many measures to ensure these can be included in separate publications as suggested by other researchers.

Data needed for the study: (please list the EU-GEI WP5 instruments):
-Baseline Structural MRI data from EU-GEI
-Transition status
-Follow-up GAF scales

-Follow-up cognitive measures (these will be in relation to MRI data only)
-Basic demographics eg age, gender, years of education
-Basic clinical information (e.g basic medication, basic symptoms at baseline, brief substance misuse)

Plan for statistical analysis (overall strategy):

Structural MRI: MRI data would be processed using the standard FreeSurfer surface analysis pipeline. Full cortical vertex analysis would be analysed using Surfstat. Although the ADNI scan has been used in all centres reducing the effects of inter-centre heterogeneity, the effect of centre will be controlled for using the general linear model with additional nuisance covariates including total intracranial volume, age and gender. A repeated measure design will be used to examine the effect of centre on cortical thickness measures.

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 baseline MRI data is complete.
Analysis: 4 months
Write up: 3 months

Additional comments:
N/A