Synopsis no.: S5.4

Preliminary title:
Gender differences in Neuropsychology and Psychopathology in ARMS subjects

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:
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Work Packages involved:
WP 5

EU-GEI Partners involved from whom candidate co-authors (*additional to working and writing group*) should be nominated: Other members of WP5 as appropriate

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

1. Neuropsychology
Sex and gender differences in schizophrenia are described in many aspects of the illness, including age of onset, symptomatology, treatment response, course and psychosocial outcome (Abel et al., 2010; Riecher-Rössler et al., 2010; Ochoa et al., 2012).
Closely related to the outcome of the disease is the impairment of cognitive functioning, which is recognized as a core feature of schizophrenia (Palmer et al., 2009; Kahn and Keefe, 2013) and not only present in patients with schizophrenic psychoses, but already in individuals with an at-risk mental state (ARMS) for psychosis (Pflueger et al., 2007; Giuliano et al., 2012; Bora and Murray, 2013).
Gender differences in cognitive functioning are well known in healthy individuals. In general, women tend to perform better than men in tasks measuring verbal abilities, whereas the opposite is true for visuospatial skills (Halari et al., 2005; Hausmann, 2007). Gender differences in cognitive functioning in schizophrenia patients showed inconsistent results. However, there are several studies that show better cognitive functioning in women, especially in the domain of language and memory (Bozikas et al., 2010; Vaskinn et al., 2011). Furthermore, no study has yet analysed gender related cognitive performance differences in at-risk mental state for psychosis (ARMS) individuals.
We expect a better performance of women in those neuropsychological tests which include verbal abilities.

2. Psychopathology
The examination of gender differences in psychopathology has been one of the most explored issues in schizophrenia. Nevertheless, the results remained heterogeneous. The studies that found gender differences in schizophrenia and first episode psychosis patients describe more negative symptoms in men (Cowell et al., 1992; Shtasel et al., 1992) and more affective symptoms in women (Walker et al., 1985; Castle et al., 1993; Morgan et al., 2008). There are only few studies about psychopathological gender differences in ARMS subjects. All of these reported no gender differences regarding symptoms at baseline (Willhite et al., 2008; Lemos-Giraldez et al., 2009; Ziermans et al., 2011; Gonzalez-Rodriguez et al., in press).

Therefore we expect no gender differences in ARMS subjects regarding symptom presentation.

Data needed for the study: (please list the EU-GEI WP5 instruments)

Baseline:
1. **Neuropsychology measures**: Beads Task, Degraded facial task, White noise Task, AVLT, verbal fluency, Short WAIS, TMT, Benton facial recognition, verbal working memory

2. **Psychopathology measures**: SCID 1+2, CAARMS, BPRS, SANS, SPIA, MADRS, GAF, YMRS, CGI,

3. **Influencing factors**: MRC Sociodemographic Schedule (Pt.1 + Pt.2), Childhood trauma questionnaire, Cannabis experience questionnaire, Tobacco and Alcohol, FIGS, Medication, Medical history

During follow-up:
- info on transition

Plan for statistical analysis (overall strategy):
Men and women (Neuropsychological Performance and Psychopathology) will be compared using ANCOVA's with age, years of education, use of antipsychotics etc. as covariates. P values will be adjusted using the Benjamini and Hochberg correction. Analyses will be performed for all ARMS now. Later, if we get info on transition we would like to compare those with and without transition.

Other analyses/methods:
According to first results possibly other multivariate methods such as discriminant analysis or regression analyses.

Involvement of external Parties (non EU-GEI):
none

IPR check (Intellectual property rights):
N/A

Timeframe:
About one year after having received data.

Additional comments:
N/A