Minutes 2nd TC ENIGMA-ADHD-MA 29 Oct 2013

Attendees:
Theo van Erp, Paul Thompson, Phillip Shaw, Xavier Castellanos, Marie Hovik, Neda Jahanshad, Derrek Hibar, Kerstin Konrad, Daniel Brandeis, Andreas Reif, Stave Faraone, Marcel Zwiers, Maarten Mennes, Jonna Kuntsi, Yolanda Vives, Katya Rubia, Barbara Franke, Martine Hoogman.

Agenda:

- **Update**
- **Collaboration model based on the answers of the Google Form**
- **Timeline for this project**
- **MOU + experts**
- **Other points**
- **To do next**

Update
So far we have had contact with 20 ADHD cohorts. Almost all have filled in the spreadsheets and form. For the sites that have filled in the spreadsheet, we now have 1350 ADHD cases. The strengths of this collaboration are:

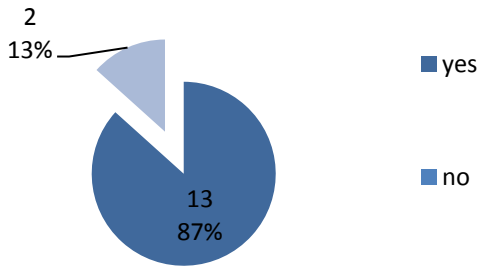
1. We exceed the largest ADHD meta analysis for structural brain volumes: An earlier paper from Valera had n=556 cases and the (VBM) analysis from Frodl had n=320 cases
2. We can perform meta- as well as mega-analysis
3. We have data of patients across the life span

Plan: the first paper will be a straightforward case-control paper about subcortical brain differences between healthy individuals and ADHD patients across the life span, correcting for important covariates such as medication use.

Collaboration model based on the answers of the Google Form

Results from the poll (see graph) suggest almost everyone is willing and able to share individual data (e.g. volumes of subcortical structures and covariates), with the exception of a few sites awaiting approval. We thus propose to go for this model, and adding data from those not able to share through meta-analysis (e.g. per age bin).

I. Data sharing: Are you able/willing to send individual data of your study sample (i.e. this only refers to volumes of the (subcortical) brain structures, covariates, all marked with a subject ID). Sharing such data would increase the possibilities and power of analysis, especially where subgroup-specific analysis are indicated.



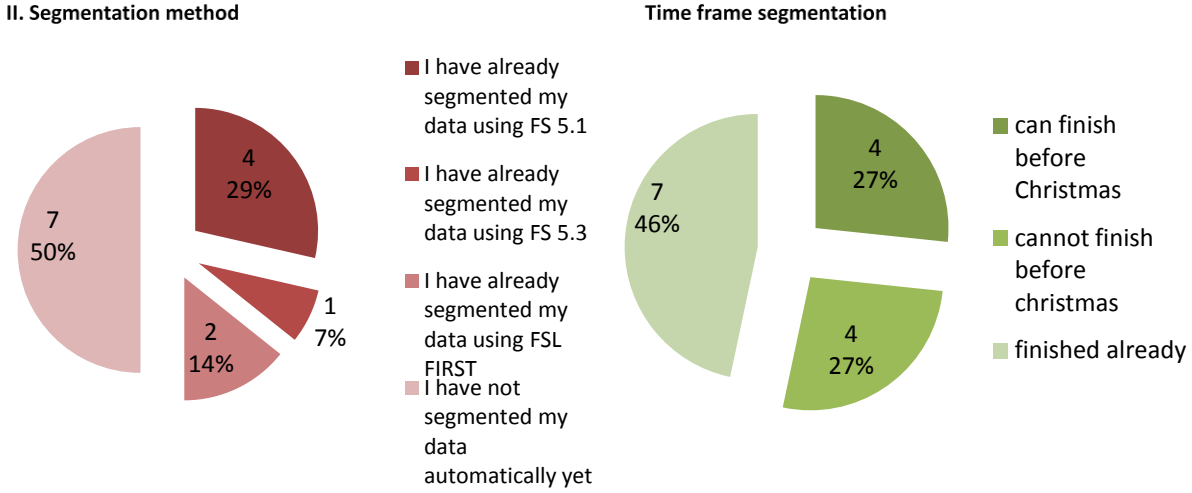
We discuss sharing of the following data:

Experimental variables: volumes of Accumbens, Amygdala, Caudate, Hippocampus, Thalamus, Globus Pallidus, Putamen

Covariates: age, gender, total brain volume or intracranial volume, imaging protocol, medication (to be specified by expert; duration, dose, which meds to be excluded), ADHD symptom counts, BMI, height, comorbidity, drug abuse, SES, IQ, behavioral therapy, pubertal stage

Segmentation method:

The results from the poll show a mix of segmentation methods, and nearly everyone is willing to re-segment to increase homogeneity.



We propose to go ahead with this mix for the first paper about the subcortical volumes to achieve a reasonable timeline. In the meantime we propose everyone to re-segment using FreeSurfer 5.3 for future cortical papers.

In the TC there was a debate about using the different segmentation methods for the first paper: For the meta-analysis, the different segmentation methods should not have to be a problem (it was done before in ENIGMA). However, for a mega-analysis we should be careful in combining segmentation methods. We will perform an analysis within our BIG cohort (2500 healthy adults with brain data segmented with FSL and FreeSurfer) to determine the differences between these methods for the different (subcortical) structures. We decide to only pool same protocol samples in mega-analysis and perform meta-analysis across protocols.

MH: for results see companion document. The correlation between FSL and Freesurfer is average, but not that great for smaller volumes. Correlation for different versions of Freesurfer is high. This will limit the power of our analysis.

Timeline for this project

A general consensus was reached for a data freeze by the end of the year; many have finished already and most of the others are able to reach the deadline using our support. We can provide help in many ways (from a distance but also do the segmentation for you).

In addition, it was suggested to make this a 'rolling meta-analysis', anticipating other sites would want to join at later stages. The deadline for a first version of the paper for the co-authors is set at 28th of February 2013 because of the maternity leave of the lead author Martine Hoogman.

IMPORTANT DEADLINES:
24 Dec 2013: first data freeze, excel sheets with data should be with Martine Hoogman
28 Feb 2014: paper sent to co-authors

MOU + experts
The MOU was adjusted according to some remarks made during the TC:

1. Experts for clinical and methodological questions were added to the document on page 4
2. Consortium name in the author list
3. Site PI must be consulted and approve before doing anything else with the data
4. Meta-analysis has been changed into meta-/mega-analysis, and it is now stated that also individual data will be shared

The MOU is now ready for signing. Please send the signed form to Martine at (martine.hoogman@radboudumc.nl)

Other points:
Within the technical support team, we now have an additional junior participating in the team, Lizanne Schweren. Lizanne is a PhD student in the Groningen NeuroIMAGE group with a particular interest in the effects of ADHD medication on the brain.

To do next:

- Decide on the final variables to be included and make a spreadsheet for the sites to be filled in (in preparation, and will be sent this week)
- Analyze correlation between protocols to be used in first paper (attached to this email)
- Send Protocol 5.3 Freesurfer (available via our ENIGMA ADHD Google group for which you have received an invitation)
- We will write an abstract for HBM Hamburg 2014 (Martine)
- MOU to be sent around for signing (attached to this email)
- If you want us to do your segmentation or want our help (protocols etc), please contact martine.hoogman@radboudumc.nl.