

ADNI Biostat conference call
10 May 2006

Present on call: Laurel Beckett, Danielle Harvey, Qian Weng, Monica from ADCS, Mike Weiner. Karen will join us.

Executive committee: Art reported that 12 May will be the opening day for applications for data access. Biostat Core members should apply promptly. Art says the application forms are going to be quite specific

The MRI call is going to discuss the processing this Friday. They anticipate about a month to process existing data, then labs will be able to start their summaries or other processing. The labs have not yet indicated how long they will take to start generating summaries. Our last call mentioned finding out about additional prep phase papers; Danielle will bring that forward this week.

The first PET analytic group call has been held. Danielle, Tom Nichols at U Michigan were both on the call. Satoshi Minoshima (one of developers of SSP, another voxel-based method for PET) will also be calling in though he was not on this call. Last week's call was more of an introduction and setting goals for calls. Right now the focus is on cross-sectional data, trying to replicate some of findings in literature. Tom is particularly interested in refining some of the longitudinal techniques as he is not happy with some of the things being done in SPM. We won't have enough to start the analytic process for a while, but the intellectual work of development is underway. Danielle is going to pull together some reports from the ADCS web site (numbers of PET by diagnosis and Apo-e status and general sense of age distribution). The next call is 7 June. John will be calling in when he can: Laurel will be on after spring quarter.

Karen Stokes asked what kind of summaries are needed on Apo-E; Danielle has access to data base so she should be able to generate anything that is not available from the reports. A new addition in the demographics has Apo-E by diagnostic category.

We have several industry statisticians who are interested in accessing our minutes and keeping up with our activities. We will alert them to deal with Karen Crawford.

Mike's biggest question: looking way down the road (a year from now): we will have univariate stuff, and voxel-based approaches. FDA will not accept subjective summaries of voxel-based analysis. Up front, voxel-based people should specify how they will define regions of interest, how they will quantify. The second thing they could do is develop a generalized voxel-based approach. We need to ask people to pre-specify summary measures and get a written analytic plan out there.

Suggestion: We can circulate a draft list of summary measures that have been used in the past. We can then ask people to propose additions or modifications. Once we have a list of candidate approaches, specific enough to be replicable, we can write up an analytic plan for comparison. Mask must be constructed in advance, from literature or from

median temporal lobe, how it will be set up. PET more likely to talk about posterior cingulated. All of these might be different for control, MCI, AD. They can use prep phase or some pilot data from baseline to pilot test definitions.

At end, will make a decision on who gets money to one complete analysis for all of ADNI. It will depend on the preliminary results from 0, 6 and 12 months. Methods might vary across AD, MCI in their sensitivity. We will also want something that is robust (does not have to exclude too many people.) Price may also be a contributing factor. We will probably need a jury or advisory board from people outside.

We will need comprehensive summaries. We will also need to look at ways to validate the outcome. What is the relationship of biomarker to what is going on with subject? We can look at many clinical measures. We will have to work with clinical people on major measures of rate of change. Then we can look at which markers validate which measures of clinical change. There will be hypotheses, for example, some regions may go with memory, some with executive function, and some with global change.

We will shoot for end of June for analytic plan. We will work on expansion of written plan; Danielle will start on this. Next voxel-based call is 7 June (same day as PET call). Danielle will try to circulate a preliminary list before Friday MRI. We should also move in direction of validation and try to get specific clinical measures and hypotheses relating them to biomarkers (Leon, Ron). Maybe separate tables for the 3 groups; rows would be brain regions; columns would be specific tests or subtests.

We will talk in two weeks.