Neuroimaging versus CSF sampling as scientific tools in human pharmacology

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Topics for the Workshop

- CSF PK/PD and relationship to pharmacology in the brain
- PET measurement of drug concentration in the brain – points to consider
- Convergence and divergence in CSF amyloid and brain (PET) amyloid measurements
- PET occupancy: technical considerations for quantitation and study design, such as single versus multiple dose
- Technical issues in quantitative analysis of amyloid PET
- Additional:
  - How well do brain PK based on CSF sampling and PET correlate? Which is most informative for PD?
  - Is there still a place for CSF sampling given its potential risks and (not necessarily) added value compared to PET?

- Testing for the presence and activity of drugs targeting the brain can present a formidable challenge during early development, especially with mechanisms that are behaviorally silent.
- Recent efforts to develop compounds that may intercept the progression of Alzheimer’s disease before the onset of cognitive impairment have led to defining candidate subjects entirely based on brain biomarkers.
- In vivo imaging and CSF sampling are both being employed as assays for drug exposure, drug action, and clinical phenotyping.
- Challenges in interpretation of the data and reliability of quantitative analysis.