Title: Application of NLP in multi-national, multi-linguistic clinical trials for dementia

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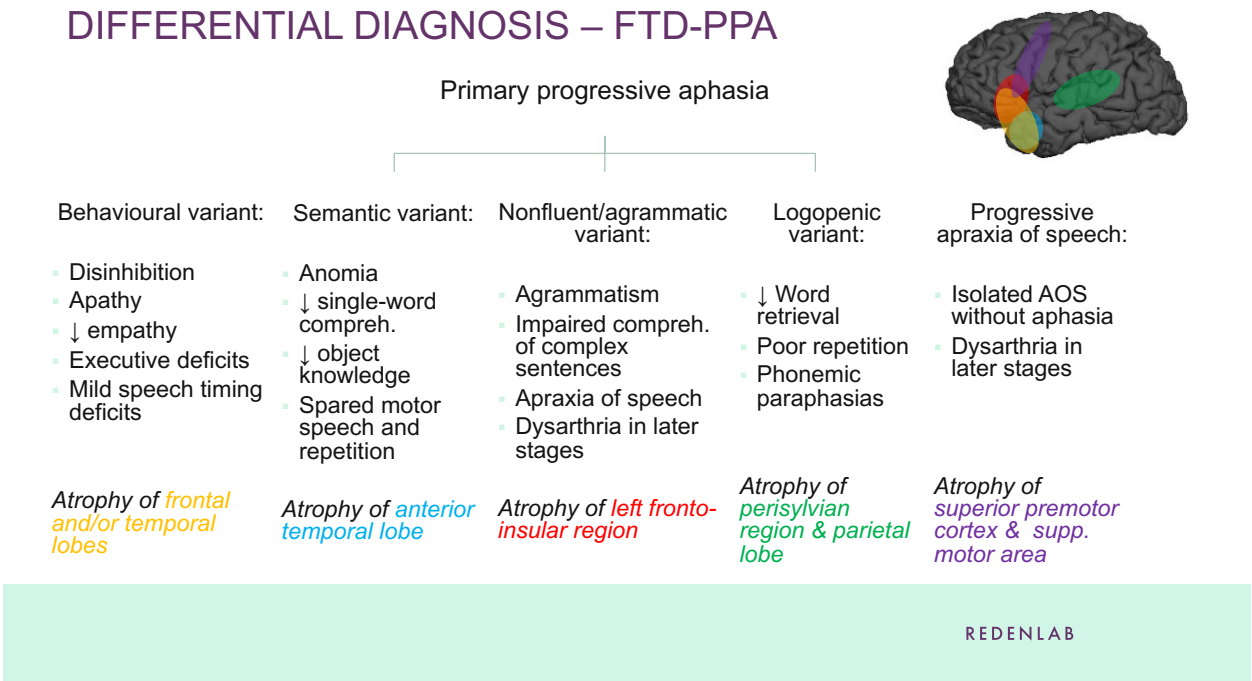
Abstract: Neurodegenerative diseases like dementia impact speech and language functioning. Measuring meaningful clinical outcomes like communication is important in clinical trials for these disease groups. Despite advances in signal processing and natural language processing approaches, there remain many challenges to their operationalisation in large multi-site, multi-lingual studies.

Redenlab are a specialised speech and language biometrics tech-bio focussed on providing meaningful clinical outcomes for the pharmaceutical industry. Here we will describe specifics of a large clinical trial in dementia that is using acoustics and NLP to enhance decision making about treatment efficacy. The challenges and opportunities of this approach will be discussed.

Summary: Fronto-temporal dementia is a group of disorders that include frank language phenotypes (see image). The presenting language impairments are dependent on the underlying aetiology and neuropathology and serve to inform differential diagnosis.



There are currently several pharma-sponsored clinical trials running for FTD/PPA globally. They all require sensitive and validated clinical outcomes to measure treatment efficacy.

Redenlab service some of these trials by providing speech and language biometrics based on objective markers of performance.

This Industry Demonstration will describe the criteria required to meet ‘pharmaceutical grade’ use and the challenges currently facing the field. These include the domains of ‘digital biomarkers’, quality management systems, multi-language measurement and operationalisation across continents.