Looking forward Lumleian foresees step-wise improvement in the care paradigm, including: (1) Genetic testing and diagnostic monitoring, (2) Preventative therapy and use of multi MoA treatment cocktails, (3) Use of bio-markers to monitor progression and inform treatment.

Future Diagnosis

- Imaging technology
  - Eli Lilly / Avid's 18F PET imaging amyloid tracer
  - GE's PiB (Fluorescent thioflavin S)
  - Siemen's PET ligand, which binds to both amyloid plaques and NFTs
- Gene Expression/Profiling
  - Athena's ApoE genotype analysis
  - ExonHit's blood based gene signature assay (EHT Dx21
- Fluid Analytes
  - Athena's CSF measurements of beta-amyloid peptides, t-tau, and p-tau
  - Applied Neurosolution's CSF measurements of p-tau
  - Nymox's urine analysis of neural thread protein levels

Future Treatment

- Prodromal treatment with an oral small molecule disease modifying agent
  - Gamma secretase inhibitor, e.g. Avagacestat (BMS), BMS708163 (BMS)
  - Aggregation inhibitor, e.g. Scyllo-inositol (ELN)
- Passive or active anti amyloid beta immunotherapy in ApoE4 carriers (Prodromal, Mild/Moderate)
  - Monoclonal antibody, e.g. Bapineuzumab (PFE/JNJ/ELN), Solanezumab (LLY)
  - Intravenous immunoglobulin, e.g. Gammagard (BAX)
  - Active immunotherapy, e.g. ACC-001 (PFE/JNJ/ELN)
- Tau targeting agents aimed at NFTs
  - Aggregation inhibitor, e.g. Rember (TauRx)
  - Phosphorylation Inhibitors, e.g. Nypta (Noscira)
- Symptomatic agents will likely be used in combination with disease-modifying agents to manage behavior
  - AChE inhibitor, e.g. Aricept (Donepezil), Exelon (Rivastigmine)
  - NMDA antagonist, e.g. Namenda (Memantine)

Lumleian

Sources: Summers, W.K. Current and future treatments of memory complaints and Alzheimer's disease. Therapy. 8(5), 491-504 (2011)