Changing the game in Alzheimer’s disease

Public private partnerships for effective clinical trials
Alzheimer’s disease
a world of unmet need

• Global problem
• Scientific advances
• Trials failure
Therapeutic opportunity; practical challenge
Adaptive trials to accelerate proof of concept
Meeting the recruitment challenge

Longitudinal Cohort Study

Selection criteria

Trial cohort

placebo
Rx 1
Rx 2
Rx ... n

Adaptation by change in intermediate phenotype

Adaptation on cognition outcomes

European Prevention of Alzheimer’s Dementia Consortium
Collaboration for translational research in dementia

**Dementias Platform UK**
- Dementia Discovery cohorts (n=2m)
- Dementia UK Biobank cohort (n=10k)

**IMI-EMIF**
- European Medical Information Framework
  - Cohorts and data integration Tools

<table>
<thead>
<tr>
<th>Sample</th>
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<tbody>
<tr>
<td>UK Biobank population</td>
<td>502,713</td>
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<tr>
<td>Episodic memory</td>
<td>498,053</td>
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<tr>
<td>Episodic memory &gt;2 SD</td>
<td>17,096</td>
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<tr>
<td>...... plus age 55 years+</td>
<td>12,447</td>
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<tr>
<td>...... plus APOE4 carrier</td>
<td>7,468</td>
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<td>...... plus APOE4/4</td>
<td>1,742</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Controls</td>
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<td>FDG-PET</td>
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<td>Ab PET</td>
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</table>
Addressing the detection challenge

Selection and stratification markers

The continuum of Alzheimer’s disease

Cognitive function

Preclinical

Aging

MCI

Dementia

Years

Progression markers
Preclinical markers for Alzheimer’s

Sensitive
Facile
Low cost

Specific
Invasive
Costly
Preclinical markers for Alzheimer’s

- Sensitive
- Facile
- Low cost

- Research cohorts
- Samples
- Industry partners

FGG associated with PET amyloid and CSF markers

Specific
Invasive
Costly
Changing the game in Alzheimer’s disease
IMI and Public Private Partnerships

• Alzheimer’s Europe – patient representatives as partners
• Engagement with regulators
• BioTech and InfoTech involvement
• Pharmaceutical companies working together
• Academic groups working to milestone driven goals
Changing the game
Prevention of Alzheimer’s disease

- Reulitising standing cohorts
- Rapid trial initiation
- Proof of concept in man
- ‘picking the winner’

Prevent and Effectively Treat Alzheimer’s Disease by 2025
Acknowledgements

> 50 executive members
> 150 principal investigators
> 500 scientists
> 50,000 volunteers
> 50,000,000 data contributors
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Academic co-coordinator: Simon Lovestone