Advancing the Science: The Latest in Alzheimer’s and Dementia Research

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OUR TIME TODAY

• Landscape of Alzheimer’s and Dementia Science
• Highlights in Early Detection and Diagnosis
• Latest Advances in Clinical Trials, Treatments and Lifestyle Interventions
Dementia is a syndrome

- Dementia is a collection of symptoms related to cognitive decline
- Can include cognitive, behavioral and psychological symptoms
- Due to biological changes in the brain
- Alzheimer's is the most common cause
- Mixed dementia is very prevalent
- Some causes of cognitive decline are reversible and not truly dementia

HALLMARKS OF ALZHEIMER’S DISEASE

Neuritic Plaques
- Extracellular deposits of beta-amyloid

Neurofibrillary Tangles
- Intracellular deposits of hyperphosphorylated tau

Neurodegeneration
- Cortical Atrophy

Healthy Brain

Advanced Alzheimer's
MCI is a known risk factor for dementia

Everyone who experiences dementia passes through MCI

When you prevent new cases of MCI, you are preventing new cases of dementia
What may impact risk:

- Age
- Genetics
- Race / Ethnicity
- Environmental and Lifestyle Factors
- Cardiovascular Health
- Physical Activity
- Diet
- Sleep
- Social / Cognitive Engagement
- Education

Fast facts on Alzheimer's

Over 5 million Americans are living with the disease (estimated 14 million by 2050).

Alzheimer's is the 6th leading cause of death in the US (more than breast and prostate cancer combined).

Dementia currently costs the nation $290 billion (rising as high as $1.1 trillion in 2050).

More than 16 million Americans provide unpaid care for people with Alzheimer's.

Alzheimer's Association (2019)
The Global Leader in Alzheimer's Research.

WE ADVOCATE

Alzheimer's and Related Dementia Research Funding at the NIH

*FY2020 number includes pending $500 million increment proposed by Senate appropriators
ALZHEIMER’S ASSOCIATION GLOBAL RESEARCH

$167+ million
500+ projects
27 countries

EXCITING TIME IN RESEARCH
BIOMARKERS ARE CHANGING THE GAME

PROGRESS TOWARDS A BLOOD TEST

- Global race to uncover and develop blood based biomarkers for Alzheimer’s and other dementia
- More research validating amyloid beta in blood by comparing to imaging and cognitive testing
- New research on blood tests for alpha synuclein and neurofilament light
- Not in your doctor’s office tomorrow, but are already being used for clinical trials

IN THE NEWS

AAIC: A Potential New Biomarker for Alzheimer’s Disease

Published: Jul 15, 2019 | By Mark Terry
A future Alzheimer’s therapy will likely include both lifestyle interventions and medicines.
**AVAILABLE THERAPIES**

FDA Approved Therapies for Alzheimer’s

**Cholinesterase Inhibitors**

- donepezil (Aricept)   All Stages
- rivastigmine (Exelon)  Mild – Moderate Stage
- galantamine (Razadyne) Mild – Moderate Stage

**Glutamate Moderators**

- memantine (Namenda)   Moderate – Severe Stage

**Combination**

- donepezil + memantine (Namzaric)  Moderate – Severe Stage

- Currently, there are no therapies that can cure Alzheimer’s
- Some drugs are available to temporarily improve symptoms
- The field is making great progress in developing new and better therapies

**CURRENT LANDSCAPE OF CLINICAL TRIALS FOR ALZHEIMER’S AND ALL DEMENTIA**

As of Oct. 2019

- **Drugs and Devices**
  - Phase I: 112
  - Phase II: 172
  - Phase III: 54

- 62 cognitive assessment, cognitive training, and computerized devices

*Always a Need for Participants*
DRUG TRIALS IN THE NEWS
BIOGEN TO SEEK FDA APPROVAL FOR ADUCANUMAB

- EMERGE and ENGAGE Phase 3 Trials
  - Anti-amyloid therapy
  - MCI due to Alzheimer’s and mild Alzheimer’s dementia
- Expanded Data Analysis
  - Reduction in clinical decline
  - Benefits on cognition and function
  - Reduction in amyloid/tau biomarkers

ANNOUNCEMENT SURPRISES THE FIELD

- March 2019: trials halted due to futility analysis conducted on partial data set
- October 2019: Expanded data set showed promise, Biogen announces launch of re-dosing studies to provide drug access to trial participants
- December 2019: Data to be announced at the next scientific meeting
- Early 2020: Submitting to FDA for regulatory review
MEDICINES FOCUSED ON BEHAVIORAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA

- A major quality of life problem for people living with dementia
- Must be tested in dementia population
- Ongoing clinical trials focusing on therapies for:
  - Agitation (aggression)
  - Sleep disturbances (insomnia / interrupted sleep disorders)
  - Psychosis (hallucinations / delusions)
  - Apathy (lack of appropriate emotional response)

MEDICINES FOCUSED ON BEHAVIORAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA

Pimavanserin (Nuplazid)

- Dementia-Related Psychosis
- Includes dementia related to Alzheimer’s, Parkinson’s, Lewy Body, Vascular, Fronto-temporal
- Potential to be 1st FDA-approved psychosis drug in dementia population
- Submitting to FDA for regulatory review: Summer 2020

Nuplazid Significantly Delays Relapses in Dementia-related Psychosis, Phase 3 Study Shows

ACADIA Pharmaceuticals
NEW FUNDING ENABLES INNOVATIVE TRIALS FOR INDIVIDUALS IN LATER STAGES OF ALZHEIMER’S

Prazosin (Minipress)

- Severe/disruptive agitation in late-stage Alzheimer’s
- Phase 2 multicenter trial will enroll individuals living in memory and Long Term Care (LTC) facilities
- 8 academic medical centers and 20 LTC involved
- Will enroll 186 participants; not open to enrollment outside of participating memory and LTC communities

https://www.adcs.org/peace-ad/

CHALLENGING UNFOUNDED CLAIMS

Increase in concern about cognitive changes and dementia
Increase in readily accessible information
Not all sources contain quality medical information

Viewpoint
January 25, 2019
The Rise of Pseudomedicine for Dementia and Brain Health

Joanna Helmsmith, MD, MPH; Gil D. Robins, MD; Bruce L. Miller, MD

- FDA sends warning letters to manufacturers of CBD products, vitamins, and dietary supplements who are making claims their products prevent, treat, or cure serious diseases, such as cancer, Alzheimer’s disease, psychiatric disorders and diabetes
- FDA developing a more comprehensive plan to evaluate
COMBINING MULTIPLE HEALTHY LIFESTYLE FACTORS

- Healthy Diet
- Moderate to Vigorous Physical Activity
- Little to No Smoking
- Cognitive Stimulation
- Light to Moderate Alcohol Intake

- Combining 4 or 5 factors → 59% lower risk
- Combining 2 or 3 factors → 39% lower risk
- May even offset risk associated with genetics

THE SPRINT-MIND STUDY

First Study to Demonstrate Reduction of New Cases of Cognitive Impairment

- 9,000+ people, Over age 50, All-cause dementia risk
- Standard vs. Intensive Blood Pressure Intervention
- Intensive treatment 120 systolic vs. 140 systolic
- Dramatic reduction of small vessel disease on MRI

- 19% REDUCED risk for MCI
- 17% REDUCED risk for Dementia
- 15% REDUCED combined risk for MCI and Dementia
There are things you can do to reduce your risk of MCI and dementia – especially regarding cardiovascular disease risk factors.

**WHY IS THIS IMPORTANT?**

Immediate opportunity with life changing impact potential

**INTERVENTIONS TO POSSIBLY REDUCE RISK...**

Lifestyle Modification & Potential SYNERGISTIC Effects on Cognition

Physical Activity

Cognitive & Social Stimulation

Healthy Diet
FINGER TRIAL

• 1260 cognitively healthy 60-77 year old adults, at increased risk for cognitive decline due to medical conditions
• 2-year study of Lifestyle Intervention vs. Usual Care

U.S. Study to Protect Brain Health through Lifestyle Intervention to Reduce Risk

Two year multi-center randomized clinical trial

Self-Guided and Structured Lifestyle Groups

2,000 Participants at five U.S. sites
TWO LIFESTYLE INTERVENTIONS

Self-Guided
Lifestyle Intervention

Structured
Lifestyle Intervention

Differ in format, expectations, and accountability

Physical Activity | Nutrition | Cognitive Stimulation | Health Coaching

AWARDED ANCILLARY STUDIES | £.s.POINTER

POINTER-zzzaging

$47 Million

$5.3 Million
GLOBAL

U.S. POINTER ISN'T ALONE

World Wide FINGERS is a broad, international network sharing experiences, data, and planning joint efforts for the prevention of cognitive impairment & dementia worldwide.

FUTURE OF ALZHEIMER’S

Adapted from Petersen R. et al. Neurology, 2018
IN SUMMARY...

- Alzheimer’s Association is a global leader for Alzheimer’s and dementia science
- Exciting time in research
  - New tools for detection and diagnosis
  - Growing diversity of therapies under investigation
- New research leading to future of therapy that combines drugs and modifiable risk factor interventions
- There is HOPE in research!!
A WORLD WITHOUT ALZHEIMER’S DISEASE.

OUR VISION

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