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2019 Memory Loss Conference

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MEDICATIONS TO TREAT ALZHEIMER’S

?
MEDICATIONS TO TREAT ALZHEIMER’S

First -
  • Has the primary doctor evaluated the patient?

  • Think about ways to solve the problem without using medications.
MEDICATIONS TO TREAT ALZHEIMER’S

First -

• Has the primary doctor evaluated the patient?
• Think about ways to solve the problem without using medications.
• Is a medication causing the problem?

• If there are sudden changes, call the doctor!
MEDICATIONS TO TREAT ALZHEIMER’S

• Symptomatic drugs
• Disease-modifying drugs

SYMPTOMATIC DRUGS

• treat the symptoms
SYMPTOMS OF ALZHEIMER’S

• Memory loss
• Behavioral problems
  • Delusions
  • Hallucinations
  • Anxiety
  • Depression
  • Agitation
  • Apathy
• Disordered sleep
• Etc.

DISEASE-MODIFYING DRUGS

• treat the disease itself
The trajectory of Alzheimer’s disease

Thinking ability

Without treatment

The trajectory of Alzheimer’s disease

Thinking ability

With *disease-modifying* treatment
The trajectory of Alzheimer’s disease

Thinking ability

We wish!

TREATMENT OF ALZHEIMER’S

• There have been no new FDA-approved drugs to treat AD in the past 14 years.
FDA-APPROVED DRUGS FOR ALZHEIMER’S DISEASE

- donepezil
- rivastigmine
- galantamine
- memantine
- donepezil + memantine

increase acetylcholine
acetylcholine esterase inhibitors (AChEIs)

interferes with glutamate
FDA-APPROVED DRUGS FOR ALZHEIMER’S

- Alter the balance of chemicals in the brain
  - donepezil (Aricept®)
  - galantamine (Razadyne®)
  - rivastigmine (Exelon®)
  - memantine (Namenda®)

THESE DRUGS CAN IMPROVE COGNITION IN ALZHEIMER’S

*P=0.053; **P=0.013; †P<0.001; ††P < 0.001

THESE DRUGS CAN IMPROVE BEHAVIOR IN ALZHEIMER’S

![Neuropsychiatric Inventory Scale](image1)

Feldman. Neurology 2001;57:613

THESE DRUGS CAN IMPROVE ACTIVITIES OF DAILY LIVING IN ALZHEIMER’S

![ADCS-ADL](image2)

Reisberg. NEJM 2003;348:1333
COMBINATION THERAPY


TREATMENT OF ALZHEIMER’S

• There have been no new FDA-approved drugs to treat AD in the past 14 years.

• The drugs that have been approved offer modest symptomatic benefit.
THESE DRUGS CAN IMPROVE COGNITION IN ALZHEIMER’S

- There have been no new FDA-approved drugs to treat AD in the past 12 years.
- The drugs that have been approved offer modest *symptomatic* benefit.
- They do not slow or stop the progression of Alzheimer’s.
The trajectory of Alzheimer’s disease

Thinking ability

Symptomatic effect

THE BENEFIT OF THESE DRUGS

• The average patient functions a little better.
THE BENEFIT OF THESE DRUGS

• The average patient functions a little better.
• A few patients do significantly better.

• They delay the conversion to Alzheimer’s disease.
DELAYING CONVERSION TO ALZHEIMER’S

The average patient functions a little better.
A few patients do significantly better.
They delay the conversion to Alzheimer's disease.
They help keep the patient out of the nursing home.

THE BENEFIT OF THESE DRUGS

Petersen. NEJM 2005; 352:2379
DELAYING NURSING HOME PLACEMENT

When donepezil was taken at an effective dose for at least 9 to 12 months, conservative estimates of the time gained before NHP were 21.4 months for first dementia-related NHP and 17.5 months for permanent NHP.

Geldmacher. JAGS. 2003;51:937.

TREATMENT OF ALZHEIMER’S

Donepezil, galantamine, rivastigmine, memantine treat the ABCs of AD:

- **Activities** of daily living
- **Behavior**
- **Cognition**
THE BENEFIT OF THESE DRUGS

Like using a crutch if we have severe leg pain...

OVER-THE-COUNTER MEDICINE

- Prevagen®
- Cognium® (Natrol®)
- Resveratrol
- Ginkgo biloba
- Curcumin (curry spice turmeric)
- Fish oil (DHA, omega-3 fatty acids)
- Vitamin E
- Coenzyme Q10
- Huperzine A
- Many others
SYMPTOMS OF ALZHEIMER’S

- Agitation
- Depression
- Anxiety
- Disordered sleep
- Psychosis
- Combativeness
- Many others

TREATMENTS FOR THE SYMPTOMS OF ALZHEIMER’S

- Non-pharmacological treatment first!
NON-PHARMACOLOGICAL TREATMENT

• Education about Alzheimer’s
• Nutrition
• Exercise
• Take care of yourself.
• What’s good for the heart is good for the brain.
• If you don’t use it, you lose it.
  • (applies to the body and the brain)

TREATMENTS FOR THE SYMPTOMS OF ALZHEIMER’S

• Non-pharmacological treatment first!
  • Pharmacological
DRUGS TO TREAT THE SYMPTOMS

• Anti-agitation
• Anti-depressants
• Anti-anxiety (anxiolytics)
• Anti-no sleep (hypnotics)
• Anti-psychotics
• Anti-caregiver burn-out
• Others

DRUGS TO TREAT THE COMPLICATIONS

• Anti-agitation
• Anti-depressants
• Anti-anxiety (anxiolytics)
• Anti-no sleep (hypnotics)
• Anti-psychotics
• Anti-caregiver burn-out
• Others

Start low and go slow!
WHAT ARE ANTIBODIES?

- One component of our immune system
- Fight infection
- Involved with allergies
- Other functions

ANTIBODIES CAN BE ENGINEERED AND MANUFACTURED

- Fight cancer!
- Manipulate immunological diseases
- Modify our pain response
- Other purposes
ANTIBODIES CAN BE ENGINEERED AND MANUFACTURED TO FIGHT ALZHEIMER’S DISEASE!

Hallmarks of Alzheimer’s Disease

[Images of Hallmarks of Alzheimer’s Disease]
DISEASE-MODIFYING DRUGS?

“Four immunotherapies now banish amyloid from the brain”

• Donanemab (NP3G, LY3002813)
• BAN2401
• gantenerumab
• aducanumab

https://www.alzforum.org/print-series/1030941

Biomarkers Are Changing the Game

Saliva Biofluid

Amyloid-β PET Imaging

Tau PET Imaging

Blood Test

CSF – Lumbar Puncture

Optical Evaluation

Healthy Individual

Mild Cognitive Impairment

Mild Alzheimer’s

Severe Alzheimer’s

alzheimer's association
**Continued amyloid reduction during gantenerumab second year**
*Examples from five patients in OLEs*

<table>
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<th>Baseline</th>
<th>Baseline cereboids</th>
<th>Week 52</th>
<th>Week 104</th>
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<td>97/0</td>
<td>791/140</td>
<td>100/60</td>
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<tr>
<td></td>
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<td>241/140</td>
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**BUT DO THESE ANTIBODY TREATMENTS AFFECT COGNITION?**
LOOKS GOOD, BUT HAS IT BEEN PROVEN?

DISEASE-MODIFYING DRUGS?

“Four immunotherapies now banish amyloid from the brain”

• Donanemab (NP3G, LY3002813)
• BAN2401
• gantenerumab
• Aducanumab has applied for FDA-approval

https://www.alzforum.org/print-series/1030941
OPEN CLINICAL TRIALS AT SIU MEDICINE

- Graduate study: anti-amyloid treatment (gantenerumab), subcutaneous injection every two weeks for 104 weeks; open-label additional 56 weeks

- Lauriet study: anti-tau treatment (MTAU9937A), IV infusion every 4 weeks for 73 weeks; open-label additional 104 weeks

- Caregiver study: (observational study), one time visit to study factors that help patients continue to live in their own homes
PLEASE CONTACT ANY MEMBER OF OUR STUDY TEAM FOR MORE INFORMATION OR TO MAKE A REFERRAL

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