



# Alzheimer's Disease

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# Patient Information

- Ralph McCormick
- 89 year old male
- Chief Complaint: non-healing wound on hip
- Diagnosed with Alzheimer's disease 4 years ago.
- Has a history of Coronary Artery Disease and Hypertension.
- 5'11" 138 lbs
- BMI 19.3 UBW 172lbs %UBW 77.5%



# Alzheimer's Disease

- Degenerative disease of the brain and neurological processes.
- Involves tangles of neurons and buildup on plaque on the brain.
- Symptoms vary depending on the area of the brain affected. Most commonly known and witnessed symptom is memory loss.
- Alzheimer's vs. Dementia – dementia is a general term for memory loss. AD is a disease that involves memory loss.



# Etiology: Theories

- Exact trigger for AD is unknown.
- Free-radical damage to neurons.
- Iron, zinc, copper, and aluminum can cause free-radical “attacks” on the brain.
- Genetics.
- Age.
- Risky lifestyle practices.
- Elevated stress levels through life.
- High blood pressure.
- Exposure to metal toxins.

# Diagnosis

- No single test can diagnose AD → use a series of tests to rule out other possible causes of symptoms.
- Medical History
- Family medical history
- Blood panel
- Physical exam
- Neuropsychological test
- Psychological testing
- Brain-imaging scan – MRI and CT



# Intervention of Alzheimer's

- Intervention of AD involves biologic, psychological, nutritional, and alternate methods.
- No intervention can stop the progression of AD or cure the disease.
- Treatment is designed around the specific symptoms of the patient along with their unique needs.

# Interventions: Cognitive Symptoms

- Cholinesterase inhibitors - prevent the breakdown of acetylcholine. It enhances cognitive processes of the brain involving memory and communication.
- Memantine - regulates the activity of glutamate which slows the progression of symptom development.



# Intervention: Psychological and Behavioral Symptoms

- Aims to resolve issues of behavior and thought processes.
- Goal to reduce stress and anxiety.
- Finds the source of issues and tries to relieve the patient of these in order to relieve anxiety.





# Intervention: Nutrition

- Stabilizing the patient is the main goal.
- Meet RDA of nutrients.
- Avoid foods that may interact with medication or treatments.
- Reduce stress and anxiety.
- Vitamin E works as an antioxidant in the body to delay damage done to the brain.



# Intervention: Alternate Methods

- Involve methods of treatment through herbal remedies, vitamins, and supplementation of substances/nutrients that are yet to be fully studied or proven successful.
- Coenzyme Q10
- “Coral” Calcium
- Ginkgo Biloba (plant extract)
- Huperzine A (moss extract)
- Omega-3 Fatty Acids
- Phosphatidylserine



# Patient Complications

- Ralph is suffering from a Stage III non-pressure wound that is slow to heal.
- Biochemical data points to protein malnutrition.
- Alzheimer's disease is complicating nutritional support.
- Ralph has been diagnosed with other diseases that may aggravate his AD symptoms.

# Wound Healing

- Energy needs: 35 kcal/g = 2,205 kcalories
- Protein needs: 1.5 g/kg = 94.5 g protein
- Extra needs:
  - Zinc – required for enzymatic reactions, DNA synthesis, cell division, and protein synthesis.
  - Vitamin C – cofactor for collagen synthesis, required for immune functioning, and acts as an antioxidant
  - Vitamin E – antioxidant
  - Arginine – increase collagen deposition, stabilizes nitrogen balance, and enhances immune function.
  - Vitamin A – required for epithelial and bone growth and plays a role in cell differentiation and immune function



# Protein Malnutrition

- Biochemical data:
  - Albumin and prealbumin low – protein malnutrition
  - Transferrin and ferritin low - anemia
  - BUN and creatinine high – elevated breakdown of lean tissue for energy
  - Hemoglobin and lymphocyte low – anemia
- Patient has experienced significant weight loss over the last few years.
- Indicated by slow wound healing.



# Alzheimer's and Oral Intake

- Anorexia
- Stress
- Aphasia – cannot verbally express preferences
- Apraxia – cannot manipulate utensils and food; cannot manipulate food within mouth
- Agnosia – cannot recognize food or utensils
- Amnesia – forgetting to eat or when to eat

# Further Complications

Furosemide	Dizziness, dehydration, tachycardia, arrhythmia, N/V, jaundice, ringing in ears, hyperglycemia.
Atenolol	Edema, chest pain, dizziness, numbness in extremities, heart failure, confusion, arrhythmia
Lisinopril	Fatigue, weakness, dizziness, hypotension, diarrhea, N/V, headache, cough, upper respiratory infection, unexplained rash.
Zocor	Headache, abdominal pain, weakness, constipation, diarrhea, dyspepsia, gas, N/V, upper respiratory infection, muscle pain and cramps
Haloperidol	Blurred vision, constipation, dry mouth, weight gain, drowsiness, rash, difficulty breathing, blood pressure changes.
Warfarin	Blood in the stool, hives, rash, itching, edema, bruising, chest pain or pressure, N/V, fever, flu-like symptoms, joint aches, muscle pains, diarrhea, difficulty moving, numbness in extremities, painful erection lasting four hours or longer.
Donepezil	N/V, insomnia, headache, generalized pain, dizziness, muscle cramps, fatigue, anorexia, weight loss, depression, dream disturbances, insomnia, fainting.



# Concurrent Diagnoses

- Hypertension – puts stress on blood vessels. In the brain, vessels are already weakened from AD. The increased pressure may cause aneurism or rupture.
- Coronary Artery Disease – restricted blood/oxygen flow to the brain.





# Increasing Oral Intake

- Pick foods the patient likes to eat.
- Create a stress free, quiet environment to allow concentration on food.
- Prepare finger foods or those which require little utensil use.
- Offer food at the same time every day to coordinate with environmental cues.
- Have snacks available between meals.
- High calorie, high protein milkshakes between meals (Nutren Repete recommended – enriched with vitamins A, E, and C along with zinc).



# Patient Treatment

- Increase protein and calorie intake to encourage wound healing and weight gain.
- Supplement Vitamin A and C, zinc, arginine, and glutamine to support wound healing.
- Meet RDA of all other macro- and micronutrients.
- Relieve stress.
- Provide assistance with meals and eating.



Questions?

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