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EH 102

Alzheimer's and Dementia

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Alzheimer's Disease

Every 66 seconds someone in the United States develops Alzheimer's. Alzheimer's is the only disease in the 6 leading causes of deaths in the United States that cannot be cured, prevented or slowed and 1 in every 10 Americans over the age of 65 has Alzheimer's. These are frightening statistics and leading researchers from around the world are working tirelessly to find a cure for this terrible neurodegenerative disease. Alzheimer's disease is complex, and the best strategy to prevent or delay it may turn out to be a combination of measures. But researchers have identified promising strategies and are learning more about what might—and might not—work. (NIA, 2018)

For Alzheimer's Disease, like the flu, there is no cure for the cause of the symptom. All that can be done is to try and work with the symptoms. However, Alzheimer's is the most common type of dementia results when once-healthy neurons (nerve cells) in the brain stop working, lose connections with other brain cells, and die. Infections which cause high fever, metabolic disorders such as thyroid problems and diabetes, certain medications, vitamin deficiencies, and poisoning with heavy metals or pesticides and other conditions that cause dementia-like symptoms can be halted or even reversed with treatment.

German physician Alois Alzheimer, a pioneer in linking symptoms to microscopic brain changes, describes the haunting case of Auguste D., a patient who had profound memory loss. In her brain at autopsy, he saw dramatic shrinkage and abnormal deposits in and around nerve cells. He set a new standard for understanding neurodegenerative disorders by establishing a close clinical relationship with

his patients and using new scientific tools to determine how symptoms related to physical brain changes. (Alzheimer's Association, 2020)

Neurodegenerative diseases are characterized by the progressive and irreversible loss of neurons from specific regions of the brain, resulting in a set of symptoms associated with a decline in memory and other cognitive processes, severe enough to reduce the ability to perform the activities of daily living. Working with patients who either have a neurodegenerative disease or you suspect they may be afflicted, can be very challenging and sad as they tend to be combative, confused, and forgetful. Offering ways to help with diagnosis and treatment can bring so much relief, especially to families. It is important to help the patients maintain their dignity during such a challenging time so if I can offer an outlet for them it would be wonderful. (Studies in Natural Products Chemistry, 2019)

Recognizing symptoms of Alzheimer's Disease early is key to helping a loved one and their medical team provide them with the best care. In the early stages there are no visible symptoms unfortunately. The middle stage is identified by an increase in memory loss, difficulty performing daily activities, withdrawing from social events, moodiness, difficulty organizing thoughts and changes in personality. In the middle to late stages the patient is unable to recognize common objects and family members. (All from Russell and Richards, MSN, RN, 2013)

Alzheimer's disease patients have plaques and tangles in their brains. Plaques are clumps of a protein called beta-amyloid, and tangles are fibrous tangles made up of clumps of protein. It's thought that these clumps damage healthy neurons and the fibers connecting them, disrupting electrical signals. Diseased tissue has fewer nerve cells and synapses compared to healthy brain tissue. Brain cells eventually die, resulting in significant tissue shrinkage or atrophy. Other genetic factors might make it more likely that people will develop Alzheimer's. (Mayo Clinic) Current treatment approaches focus on maintaining the mental function, managing behavioral symptoms, and slow or delay the disease

progression. (FocusMedica) There is only one known medical treatment that simply helps slow the degeneration of neurons in the brain. Otherwise there are many selfcare ways you can approach helping yourself or a loved one with Alzheimer's Disease.

Although Alzheimer's as stated above DOES NOT have a cure we are merely trying to manage the symptoms and try to hold onto the functions we have left. Scientists are not absolutely sure what mechanism specifically causes cell death and tissue loss in a diseased brain. (Aging care) Although not all causes of Alzheimer's disease are known, experts do know that a small percentage are related to mutations of three genes, which can be passed down from parent to child. While several different genes are probably involved in Alzheimer's disease, one important gene that increases risk is apolipoprotein E4 (APOE). AChE inhibitors (Cholinesterase inhibitors) helps compensate for the death of cholinergic neurons. They offer symptomatic relief by inhibiting acetylcholine (ACh) turnover and restoring their synaptic levels. Certain Cholinesterase inhibitor drugs on the market right now to help improve brain function are Donepezil, Galantamine, and Rivastigmine. (Focus Medica)

As well as treating with medications, vitamins, engaging in cognitive therapy, arts and physical activity can play a large role in maintaining brain function. It is also imperative to create a supportive environment for loved ones and patients. Emotional support is helpful in aiding someone with Alzheimer's to help them not feel alone and help them feel safe. Adapting the living situation to the needs of a person with Alzheimer's is an important part of any treatment plan. Getting connected to groups online and in your community would be helpful for resources and support.

Alzheimer's doesn't just affect the person who is diagnosed, it also turns your world upside down if your loved one is grappling with the condition. Let us not forget the patient too. They may not be able to know who we are, but they feel us just the same. (Quote, Amanda Dillon) Be an advocate for

someone with Alzheimer's and remember who they were and develop a relationship with who they are now.

References

National Institute on Aging. What Is Dementia? Symptoms, Types, and Diagnosis.

<https://www.nia.nih.gov/health/what-dementia-symptoms-types-and-diagnosis>

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<https://www.alz.org/alzheimers-dementia>