

Alzheimer's

The Current State of Affairs - Alzheimer's Research



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When it comes to assessing the current state of affairs in Alzheimer's research, there are some interesting facts to consider. The first is that since 1998-2017, there were over 146 drug trials for Alzheimer's, all of which failed. The second is that in the last two years two more trials, one of which was a stage three advanced trial, there were additional failures, from companies such as Eli Lilly and a subsidiary of Genentech. At the moment there are 5.4 million Americans diagnosed with the disease, and 44 million worldwide. Both of these numbers are expected to double in the next 15-20 years.

If that is not sobering enough news, there is no known cure for Alzheimer's. The focus of research over the last decade or two has been to look at the formation of amyloid plaque in the brain, a protein that causes brain tissue to lose function in the initial stages and in later stages essentially renders the brain nonfunctional. The progression of the diseases from early to late stage can last over a period of 10-12 years.

A New Approach

It is against this backdrop that our team of therapists begins to look at what the research community is now starting to call 'non pharmaceutical strategies.' Part of the challenge with the pharmaceutical approach is that, to quote functional medicine-oriented doctor Dale Bredesen 'we are asking the drugs to do too much.' What Bredesen means by this is that Alzheimer's disease is really multifactorial, and there are multiple factors that may contribute to the disease process.

According to Bredesen, for example, some of the factors that may contribute to Alzheimer's include: 1. inflammation; 2. hormonal imbalances; 3. toxicity-as in heavy metals such as mercury aluminum and even cadmium; 4. cardiac insufficiency-caused from such things as strokes and heart attacks; 5. Trauma-including physical trauma caused by concussions, motor vehicle injuries and closed head injuries.

Due to the targeted nature of the pharmaceutical approach, looking for one molecule to intercede or interrupt in a complex biological process may not take into account other factors that are simultaneously interacting with brain activity.

In our clinical observation we've found that clients often display a combination of the above factors, and in different combinations and percentages of occurrence.

What a number of clinicians, osteopaths, chiropractors, and other healthcare professionals have been drawn to inquire into is the role of diet and its long-term effect on memory and Alzheimer's. So much so that some functional medicine doctors such as Mark Hyman and David Perlmutter are starting to call Alzheimer's 'type 3 diabetes.' Their observation is that sugars in abundance, as well as other blood sugar raising foods, imbibed over decades, will finally cause enough inflammation to cross the blood brain barrier and effect memory and overall cognitive behavior. They and others have developed an approach which includes extensive and specific blood testing, along with an adaption of paleo and other dietary approaches to help the body and brain recover from decades of excesses from the past.

Still others have focused on the importance of exercise in preventing long term memory problems. Of course, massage and its ability to increase blood flow, improve overall circulation and flexibility can play an important role as well.

New Discoveries

In the past 10 years there have been some exciting discoveries in the field of neurology and brain science. Chief among these have been the discovery of the glymphatic system, or what some call the 'fascia of the brain.' A team of Nobel winning scientists was able to image the complex network of over 100 billion neurons and 100 billion glymphatic cells (glymp means 'glue') and determine how fluid moves from one part of the brain to another, collecting toxins and waste products along the way. What surprised scientists is just how effective this system is, and, in addition, how much of this waste disposal occurred during sleep, spurring some to appreciate just how important it is to have a good, interrupted night's sleep.

If we look a little more deeply into the role of the fluid that circulates throughout the glymphatic system, we can appreciate the potential of how to perhaps enhance this clearing process of toxins. Decades ago, my

mentor, Dr. John Upledger researched and pointed out the role of cerebral spinal fluid (CSF) as it circulates throughout the brain and spinal cord. He helped to define the existence of the craniosacral system that conducts this fluid throughout the meningeal system, though the periphery of the brain and spine, and even pointed out this rhythmic activity of this fluid, and how a therapist can be trained to feel it. One of the results of this inquiry was the emergence of Craniosacral Therapy.

It turns out that there is a delicate interface between cerebral spinal fluid and the way that it is conducted into this network of neurons and cells we call the glymphatic system. My associate Tad Wanveer has done a wonderful job of describing this complex system and describes in some detail the pia glial interface in the meningeal system. Essentially CSF becomes extracellular fluid, a substance that is able to penetrate into essentially every cellular space in the brain. I like to say CSF starts in the periphery, flows though through the pia glia limited membrane barrier and trickles into every nook and cranny of the brain.

Scientists at the University of Rochester, who have been instrumental in helping to define the existence of this glymphatic system, have speculated that what happens in Alzheimer's is that this flow of fluid into the brain begins to dry up, essentially clogging the glymphatic structure and destroying the neuronal and vascular structure which is essential for cognitive function. They have further speculated that if there was a way to speed up the flow of this diminished fluid, it may help to wear away the depositions of the toxins and help improve cognitive function.

A new Etiological Model

Some years before the emergence of the glymphatic system research, I was fascinated by Dr. Upledger's observation that in middle age the circulation of CSF diminishes by as much as 50%. This observation was further enhanced by our research team at the University of Iowa who in early 2000 found that in patients with dementia and Alzheimer's the flow of CSF was up to 75% less than that of a normal adult. Out of this emerged a new Etiological model for Alzheimer's.

continued on page 16

The Current State of Affairs - Alzheimer's Research

continued from page 15

Etiology is the study of causes. I was inspired to look into a new Etiologic model for Alzheimer's by Dr. Upledger's work in early 2000 on his etiologic model for autism.

Essentially our etiologic model is the following:

When there is a lack of flow of CSF (and by derivation extracellular fluid) in the brain, there is an increased opportunity for the formation of the amyloid plaque which is the signature protein or substance that is found in all Alzheimer's patients. Recall the 5 factors which can contribute to Alzheimer's disease? Chief among them is inflammation, one of the more popular theories now current to explain how neuroinflammation can contribute to cognitive decline. Actually, any one of these factors may result in this problem -diet which can cause neuroinflammation, hormonal imbalance, heavy metals, cardiac dysfunction (which can carry its own inflammation) and trauma-such as experienced in concussions.

In any case all of these causative factors can result in increased absorption of CSF in brain matter and a restriction of fluid flow, which again can lead to this a plaque formation.

The counter to this lack of CSF and extracellular flow is a simple one- application of a Craniosacral Still Point and other techniques which can increase and enhance this flow. In our discussion of alternative, non-pharmaceutical approaches to Alzheimer's, we believe this is the 'missing piece' that is complementary to dietary, exercise and other approaches.

Testing Our Theory

Over the past several years we have been at work testing the above theory in limited and now more expanded venues.

Our first foray was commemorated in a 2008 study published in the American Journal of Gerontological Nursing entitled the Craniosacral Still Point Technique-Exploring its effects in Individuals with Dementia. The focus of the study was to see how these techniques affect agitation, depression and cognitive factors, which were found to be positively impacted over a 6-week period of time. Since then, we have conducted a number of individual trials to confirm the original findings and are currently concluding a 2-year study on individuals with early to mid-stage Alzheimer's at the Upledger Institute intensive program.

A Vision for the future

Our 5-year goal is to see if we can significantly reduce the deaths from Alzheimer's worldwide. Admittedly an ambitious task, we believe that with enough trained therapists, we can begin to see, over time, how the application of Craniosacral techniques can help stop the progression and even reduce the symptoms of this disease.