Alzheimer’s disease (AD) is one of the most dreaded and worrisome diseases since it progressively robs its victims of personality and awareness as well as slowly diminishing the essential functions of their bodies. It currently lacks effective prevention or treatment options, but there does appear to be substantial hope on the horizon if present-day research pans out.

Our guide to the technical state of the art in this work is Dr. Mukaila Raji, a professor and the director of the University of Texas Medical Branch’s Division of Geriatric Medicine.

To begin, brain inflammation is one investigative path now in view. Does AD result from an infection or other insult to the brain?

“Patients with AD lose neurons and neuronal connections due to the accumulation of amyloid plaques and tangles in areas of the brain that are critical for memory and thinking,” Raji said. “The brain’s efforts to clean out the dying neurons is accompanied by scavenger cells into the areas of plaques and tangles. These cleanup or garbage collectors’ leave widespread inflammation products such as free radicals and destructive complements that kill large numbers of additional neurons. As each neuron dies, the cycle of inflammation begins all over again.”

So far, trials of anti-inflammatory drugs used to treat unrelated conditions such as arthritis only appear to have made things worse. Still, possibilities remain for new drug classes which are being discovered.

“Ongoing studies with other anti-inflammatory agents are currently being developed and tested, but the goal is to develop an anti-inflammatory drug that will stop the inflammation and prevent Alzheimer’s without affecting the renal and gastrointestinal functions,” Raji said.

“One widely reported experimental drug is called Aducanumab. It could be revolutionary,” said Raji.

“It is a monoclonal antibody which targets plaques for break down and rapid removal,” he said. “What makes this exciting is that the Alzheimer’s patients getting the high trial dose not only have less plaque in their brain scan, but they also have a significant slowing of their memory decline.”

He also cautioned that only small-scale studies have been done so far, so more research is needed to confirm the promise offered by Aducanumab.

Scientists in Australia, at Flinders University, recently published an animal-tested vaccine for AD. Their findings were noted in media around the planet. It’s not the first shot at a vaccine, but Raji said it offered unique possibilities.

“I’m cautiously optimistic about the Flinders’ vaccine, because almost all vaccine trials in the past have led to disappointment, after much-hyped publicity about how successful they were in mice and other nonhuman animals,” Raji said. “This vaccine is unique in that it leads to antibody production that clears not just the plaques but also the tangle-associated proteins.”

The ultimate solution to the curse of AD will probably be a combined approach.

“I think curative answers will lie in a combination of lifestyle changes, medications and vaccines that target multiple areas,” Raji said.

In the meantime, AD remains a difficult diagnosis in its early stages. Often it remains undetected until the damage is widespread, severe and debilitating. In addition to treatment options, a number of research groups are attempting to develop a blood test to detect AD.
“I am optimistic about ongoing studies geared toward the discovery of simple blood tests that can detect Alzheimer’s in its early stages, given the incredible advances we have seen in genomics,” he said. “However, at this point, we do not have any blood tests that are specific or sensitive enough to detect Alzheimer’s disease and help clinicians make decisions about diagnosis and treatment. What we have now is mostly a combination of a spinal fluid test and a brain amyloid scan as a mechanism for detecting Alzheimer’s in its early stages.”

AD begins as long as 20 to 30 years before its effects often become pronounced enough to diagnose. There are changes in a person’s walk, thinking, emotional states and other parameters, but these are so slow and subtle that they are generally discounted or overlooked.

Raji ended the interview with an appeal for collaborators in the fight to end AD.

“Many in the community may want to know how they can help in the quest to help millions of Americans living with Alzheimer’s disease,” he said. “The journey to find a cure for Alzheimer’s will require contributions from all of us scientists, patients and their families, all health care professionals, policymakers and legislators, and a commitment of huge financial and human resources. Each one of us can take a step in this journey by volunteering for clinical studies, by donating to the Alzheimer’s Association and participating in the Bay Area/Galveston County Alzheimer’s Association Walk to End Alzheimer’s at Stewart Beach Pavilion in Galveston Island on Saturday, Oct 8.”

To register for the walk, please contact Krista Bohn 713-314-1313 or email walk@alztx.org

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