

Development Pipeline for Patients of Parkinson's and Alzheimer's *Filling Fast*

By Amanda Baltazar

Almost one million Americans have Parkinson's disease with 60,000 new diagnoses each year. At the same time, more than five million Americans are living with Alzheimer's disease, contributing to its status as the sixth leading cause of death in this country.

The drug development pipeline for both of these diseases is heating up. Over the past five years there have been several approvals of drugs for Parkinson's disease and there are potentially many on the horizon targeting Alzheimer's.

Parkinson's Disease

The FDA approved Ongentys (opicapone) from Neurocrine Biosciences in April 2020 and in May approved Kynmobi (apomorphine hydrochloride) from Sunovion.

Ongentys is an oral add-on treatment for patients experiencing symptoms while on a levodopa/carbidopa regimen. This type of drug mimics dopamine, noted Rebecca Gilbert, vice president and chief scientific officer of the American Parkinson Disease Association. "The slowness, stiffness, and tremors of Parkinson's are due to a reduced level of dopamine," she said, adding that until now the only help for this came as an injection. This belongs to a class called COMT inhibitors, which extend the life of a dose of dopamine, and is taken daily.

Kynmobi is an apomorphine film that is placed under-the-tongue to be used when a patient feels symptoms worsening. It can be taken up to five times per day.

Gilbert reported that pharmaceutical companies are also looking into "a whole other set of problems that define the disease" such as sleep disorders and cognitive problems. "A major un-met need is finding medications to treat these," she said.

As well, there is a lot of research looking into finding neuro-protective agents, which would slow down Parkinson's. "It would be great if it could help prevent it in people at high risk of developing the disease," Gilbert added.

However, the biggest problems associated with the disease are typically the motor problems – slowness, stiffness, tremors, and involuntary rapid movements of the hands, she said. These symptoms usually worsen as the disease progresses.

Alzheimer's Disease

While there have been no recent approvals of drugs to treat Alzheimer's disease, there are several in development.

The first that will reach an approval review may be aducanumab, which "could potentially slow down the decline in people with very mild cases of the disease," commented Ian Grant, assistant professor of neurology,



Northwestern University Feinberg School of Medicine and director of clinical trials operations, Mesulam Center for Cognitive Neurology and Alzheimer's Disease in Chicago. This drug works by targeting the amyloid-beta plaques found in the brain of people with Alzheimer's and is currently under review by the FDA.

"Whether or not it's approved, it's reason to be cautiously optimistic in going after amyloid in people with Alzheimer's," Grant said.

Clinical trials are looking at similar types of medication and Grant hopes to see medications that will be able to prevent Alzheimer's by checking for other signs in the brain that precede the development of amyloid plaques.

Other trials are examining another protein, tau, that accumulates in the brain of patients with Alzheimer's. "There's some thought that if you can remove that, you may help prevent the disease progression," he explained. Research is being conducted into helping reduce or modulate the inflammatory response, which can lead to "significant damage," he added.

The nerve degeneration that occurs is not just an effect of the proteins themselves but rather the immune system's response to them. That inflammation can lead to more significant damage.

There are emerging blood tests that may be able to detect amyloid plaques. Until they emerge, the only way to check for them is through a CAT scan or a spinal tap. "That will probably be the next biomarker that will be clinically available," Grant said, who thinks it "highly likely we'll see that in the next five years." **DSM.**