FDA approves first drug for Huntington's disease

August 16 2008

The U.S. Food and Drug Administration today approved tetrabenazine, the first drug approved for use in the United States to treat Huntington's disease, a fatal, inherited neurodegenerative disorder for which there is no cure. The action comes about eight months after an advisory panel unanimously voted to advise FDA to make the medication available to treat the disease.

The drug is already widely used in Europe, Canada and Australia to treat one of the most disabling symptoms of Huntington's disease, involuntary writhing movements known as chorea. Chorea is one of the trademark symptoms of the disease, which directly affects about 30,000 people in the United States today; another 70,000 people who are alive today will be diagnosed with the disease. FDA has classified tetrabenazine as an "orphan drug," since it's targeted to a disease that directly affects fewer than 200,000 people in the nation.

The pivotal study leading to the drug's approval was done by the Huntington Study Group, based at the University of Rochester Medical Center, and was led by Rochester neurologist Frederick J. Marshall, M.D. That study, published in the journal Neurology in 2006, found that the medication cut down involuntary movements on average by about 25 percent, with many patients experiencing a greater improvement. Overall, patients who received the medication were six times as likely to be considered by their doctors to have improved considerably, compared to participants who received a placebo.

"This is a huge deal," said Marshall. "Ninety percent of patients with Huntington's disease have chorea, and many suffer terribly. It's hard to describe the torment that these people undergo. We had several patients who experienced a dramatic improvement in their quality of life. Some patients who hadn't been able to attend church for years were able to do so. Others were able to go out to a restaurant and have a meal for the first time in years. It's impossible to over-emphasize what this has meant to some patients, who are able to reclaim part of the life that they have lost due to this disease."

Marshall is part of a team of doctors, scientists and nurses at the University of Rochester Medical Center that treats people from more than 200 families from throughout the Northeast with the disease. He has treated patients with the disease since 1991.

"Patients and families with Huntington's disease maintain a courageous hope for progress," said Marshall. "On one hand, the FDA approval of tetrabenazine represents only a small step forward. This medication helps patients control their movements better, but is not known to slow the underlying progression of the disease. On the other hand, the FDA approval represents a giant symbolic breakthrough, since tetrabenazine is the first drug ever approved in the United States for any aspect of Huntington's disease. It is an honor to be part of the extended community of patients, families, and researchers trying to find a better way forward."

His enthusiasm is echoed by patients, family members, and doctors and nurses nationwide.

"This is spectacular news," said Nancy Wexler, Ph.D., Higgins Professor of Neuropsychology at Columbia University and president of the Hereditary Disease Foundation, which was started by her father one year after her mother was diagnosed with Huntington's disease in 1967.

"My mother and many others have died without the benefits of tetrabenazine," said Wexler. "Since the medication was invented in the 1950s, worldwide it has been give to close to a million people. We have a tremendous amount of information about its benefits, potential side effects, how to treat the side effects and dosing suggestions. This is day to celebrate for Huntington's patients and their families."

The drug does have some side effects, including the ability to worsen depression and to make movement more difficult. The drug does not appear to help other symptoms of Huntington's disease, and it does not slow the progression of the disease or stop the underlying disease process. But most neurologists feel that overall, the benefits of the drug outweigh the side effects, especially considering that there has been no medication approved for the treatment of Huntington's patients.

Huntington's disease usually strikes people in their 30s and 40s, though some patients are affected as early as childhood, while others aren't affected until their older years. The disease is caused by the death of brain cells known as medium spiny neurons, which are killed off by a mutant protein. The disease brings with it an array of difficulties besides chorea, including cognitive problems, changes in personality, and psychiatric problems like depression. As many as one-quarter of patients with the disease attempt suicide, and many suffer from progressive cognitive decline. Unlike Alzheimer's disease, where patients usually lose their memory and insight into their disease at some point, most Huntington's patients understand exactly what is happening to them throughout most of their illness.

Virtually everyone with the disease had a parent with the disease, and children of a person with Huntington's have a 50-percent chance of inheriting the disease. Fifteen years ago the gene that causes the disease was identified by Wexler and colleagues, and now a simple blood test can tell people whether they will develop the disease or not. But since

there is no way known to prevent the disease or slow its progression, and for other reasons as well, many patients decline the test, instead waiting to see if they develop symptoms like the ones they witnessed in a parent.

Prestwick Pharmaceuticals of Washington, D.C. owns the rights to develop and sell tetrabenazine in the United States. The medication was originally developed in the 1950s to treat psychosis, but was quickly pushed aside by more effective medications. But doctors in the United Kingdom found it to be effective to treat the excessive involuntary movements of Huntington's.

Much of the work that led to the approval of tetrabenazine was carried out by the Huntington Study Group, a non-profit, cooperative group of Huntington's disease experts from medical centers throughout North America, Europe and Australia who are dedicated to improving treatment for persons affected by the disease. HSG is supported by the Huntington's Disease Society of America, the Hereditary Disease Foundation, the Huntington Society of Canada, and the High Q Foundation.

The chair of HSG is neurologist Ira Shoulson, M.D., a University of Rochester professor who is widely recognizing for revolutionizing the way clinical trials are done for neurological conditions like Parkinson's and Huntington's diseases. The study of tetrabenazine would have been nearly impossible to do without the cooperation of doctors, nurses and patients across the nation, made possible through Shoulson's groundbreaking work with HSG. Another Rochester scientist, Peter Como, Ph.D., associate professor of Neurology, is a nationally recognized expert in the neuropsychological aspects of the disease and has been involved in studies of the medication.

Source: University of Rochester