New discovery in Parkinson's research

November 24 2010

A major lead for potential new treatment for people with Parkinson's Disease has been discovered by a team at Cardiff University.

The study, funded by Parkinson's UK, has been published this week in the journal Proceedings of the National Academy of Sciences.

The researchers have identified an overactive pathway inside nerve cells that could be 'turned down' to potentially halt or reduce the uncontrollable movements called dyskinesia, which are an unwanted side effect of Levodopa, one of the main drugs for Parkinson's.

Although Levodopa is one of the best treatments available, dyskinesia is one of the main problems. These are involuntary movements which can mean that people's bodies distort or their arms or legs jerk uncontrollably.

Dyskinesia is different from the resting tremor that is usually associated with Parkinson's. The movements are one of the most distressing side effects of taking Parkinson's drugs. Dyskinesia make day to day life with Parkinson's even more challenging. Many of the things which we take for granted, such as sitting still, writing, walking or dressing become difficult or impossible.

The international study involved also researchers from Sweden, France, Italy and China and was co-funded by several partners, including Parkinson's UK and the Michael J Fox Foundation. Parkinson's UK awarded £400,000 to lead researcher Dr. Riccardo Brambilla, of Cardiff School of Biosciences.

The study shows how a chain of events inside nerve cells called the Ras-ERK pathway becomes hyperactive and leads to dyskinesia. Dr. Brambilla's team was able to stop dyskinesia in animal models by turning down the activity of two key parts of this overactive pathway.

Dr. Brambilla said: "Our work will pave the way for effective new treatments that can reduce or prevent dyskinesia. The challenge will be to target and block the right nerve cells in the brain which cause dyskinesia, without interfering with the positive benefits of Levodopa."

Dr. Kieran Breen, Director of Research and Development at Parkinson's UK, said: "We know just how distressing and widespread dyskinesia can be.

This research is an important step forward in the search for better treatments that will make a real difference to the quality of life and confidence of thousands of people with Parkinson's.

Provided by Cardiff University