Therapy found for Parkinson's disease dyskinesia

Researchers may have found a way to treat the disabling dyskinesia frequently induced by treatment of Parkinson’s disease with levodopa. Working in a monkey model of the disease, Erwan Bézard (Université Victor Segalen, Bordeaux, France) and colleagues report that levodopa-induced dyskinesia can be greatly attenuated by treatment with a partial dopamine D3 receptor agonist.

In Parkinson’s disease, which is caused by a lack of the neurotransmitter dopamine, replacement therapy with levodopa initially improves motor symptoms. However, many patients develop dyskinesia after extended treatment and the uncontrolled and random movements of severe dyskinesia, says Bézard, “can be more socially disruptive than the Parkinson’s disease itself”.

Little can be done at present to reduce dyskinesia, says Peter Jenner (King’s College, London, UK). “For example, reducing the dose of levodopa provoking the movements can reduce their intensity but usually at the expense of antiparkinsonian activity and amantidine can suppress dyskinesia in some patients.” But, says Bézard, this latter drug can cause side-effects such as psychosis. Bézard and colleagues turned to an animal model of Parkinson’s disease to look for other treatments for dyskinesia. They report that dopamine D3 receptor expression is decreased in monkeys treated with 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine, a compound that induces parkinsonism. However, in those monkeys that developed dyskinesia after extended levodopa treatment, D3 receptor expression increased.

The researchers postulated that, if the fluctuations in the function of this receptor could be limited, levodopa-induced dyskinesias could be attenuated without losing levodopa’s beneficial effects.

To test this idea, the researchers treated their monkeys with BP 897, a partial D3 receptor agonist. “The confirmation of SCV’s role in SARS will have a substantial effect on efforts to control the disease,” said Alison Galvani (University of California, Berkeley, CA, USA). “The identification and genetic sequencing of the causative agent of SARS does have implications for the control of this disease both in the short term and in the long term”, she said. “The PCR assay can be used as a diagnostic test to identify people who are incubating the disease but are not yet symptomatic. This will enable us to develop much more efficient quarantine procedures of only the people who have been infected, rather than everyone who may have been exposed.”

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