Novel Treatment for Levodopa Induced Motor Fluctuations and Dyskinesia Associated with Parkinson's Disease

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Technology description

Invention:This technology is to repurpose ketamine as a treatment for levodopa-induced dyskinesia (LID) associated with the treatment of Parkinson’s disease (PD).
Background:Parkinson’s disease is a debilitating disorder that affects over 1.5 million Americans. There is currently no cure for Parkinson’s disease, although a number of drug combinations are currently used to treat the disease symptoms. Over the past decade, only five new drugs have been FDA approved for the management of the symptoms associated with Parkinson’s disease. Levodopa (brand names Lavodopa®, Dopar®) is the gold standard for Parkinson’s disease treatment, but features significant drawbacks, including the major side effect of dyskinesia and a loss of effectiveness over time. Levodopa-induced dyskinesia (LID) has been identified by the regulatory authorities, patient advocacy groups such as Michael J. Fox Foundation, and key opinion leaders as a huge unmet medical need.
Publication:
Long-term effect of sub-anesthetic ketamine in reducing L-DOPA-induced dyskinesias in a preclinical model. Bartlett MJ, Joseph RM, LePoidevin LM, Parent KL, Laude ND, Lazarus LB, Heien ML, Estevez M, Sherman SJ, Falk T.Neuroscience Letter, 2016; 612: 121-5.
Case reports showing a long-term effect of subanesthetic ketamine infusion in reducing L-DOPA-induced dyskinesias. Sherman SJ, Estevez M, Magill AB, Falk T.Case Reports in Neurology, 2016; 8: 53-58.
Table from the case report:

Application area

• The invention may be used to reduce dyskinesia associated with levodopa therapy for patients with Parkinson’s disease.
• The invention may also be used to prevent LID when used during the period of developing LID.
• The invention may also be used to treat pain and depression associated with Parkinson’s disease while treating LID.

Advantages

• Repurposing drugs that have already been proven safe in humans has the potential to offer new therapies at a fraction of the time and money required to develop new drug treatments.
• This drug may allow clinicians to maintain higher doses of levodopa over longer periods of time, potentially improving the health and wellbeing of patients with Parkinson’ s disease.
• Preliminary data in patients shows that the unique ketamine infusion protocol induces long-lasting beneficial effects on reducing or eliminate LID.

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