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New Insights in Parkinson's Research

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Editorial

As the Parkinson's Awareness Month begins, a major new research from around the world is shedding light on the condition and opening the path for future therapeutic trials. The research establishes the first link between the most frequent genetic risk factor for Parkinson's disease and the distinctive build-up of a protein called alpha-synuclein in Parkinson's patients' brains playing a key puzzle in Parkinson's condition.

10-12% of people with Parkinson's have a mutation in one copy of a gene called glucocerebrosidase, or GBA but how these mutations contribute to the illness and how they fit together with other pieces of the puzzle like alpha synuclein build-up in the brain was not comprehendable. Alpha-synuclein is referred to Parkinson's 'bad cholesterol', since it accumulates progressively in the brain as Parkinson advances. The affected brain cells exhibit indications of damage and as they die, showing the characteristics of Parkinson's disease such as tremors, stiffness, and slowness.

The recent research demonstrates that GBA mutations in Parkinson's patients impair the efficiency and elimination of alpha-synuclein by brain cells. Although GBA mutations are non-exclusive, they substantially increase the risk of acquiring the disease by making patients sensitive to alpha-synuclein accumulation. This might help explain why patients with GBA mutations often acquire symptoms of Parkinson 4 or 5 years before they do not have them. These discoveries are especially interesting as they might considerably speed up the development of new therapies for Parkinson if verified by other researchers.

Several companies have developed or are actively working on drugs that target GBA for another disease called Gaucher disease, and our research suggests that these drugs could potentially be useful in Parkinson's, and in a related disease called Lewy body dementia.

The recent research has identified five distinct models for predicting the early stage Parkinson's disease using these categories of both non-motor clinical and biological factors. The models can help to administer future therapies more quickly when they are available as Some of them were better than others, but all the early stage (preclinical) Parkinson's disease separated themselves from healthy, comparable ages, with more than 80% accuracy. These models might be highly effective in distinguishing people with Parkinson's-like symptoms who do not have the illness from those who do.

Cross-sectional and baseline data from the Parkinson's Progressive Markers Initiative (PPMI) was utilized by researchers. The employed PPMI data have been limited to non-motor clinical factors and biological factors. Five separate models were "trained" to assist distinguish the Parkinson disease at an early stage. Early-stage Parkinson's disease can be predicted more easily and accurately, allowing people who are diagnosed to make lifestyle modifications early on, such as frequent physical activity, which can improve mobility and balance. Early Parkinson's/control and early Parkinson's/SWEDD analyses, and across all models, hyposmia-a reduced ability to smell and to detect odours-was the single most important feature to distinguish early-onset Parkinson's, followed by rapid eye movement behavior disorder.