Tackling Parkinson's with targeted therapeutic vaccines

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Clinical trials are about to begin on a new Parkinson's disease vaccine that could offer patients significant improvements over current treatments. The vaccine, developed through the FP7-funded SYMPATH project, may actually be able to modify disease progression, rather than simply providing symptomatic improvement.

The breakthrough could improve the lives of hundreds of thousands of people. Parkinson's disease is the second most common neurodegenerative disorder among the elderly; it has been estimated that there are around 1.2 million patients in Europe alone. There is currently no cure and existing therapeutic measures are only able to treat symptoms. The disease typically starts with non-motor symptoms, and progresses slowly but steadily to a debilitating state.

What is more, the provision of healthcare for the elderly has become a pressing social and economic concern. By 2025, more than 20 % of Europeans will be 65 or over, with a particularly rapid increase in the number of over 80s. An ageing population means increased incidences of physical, sensory and mental diseases. If Europe is to maintain manageable healthcare costs and ensure a decent quality of life for millions of its citizens, then diseases like Parkinson's must be tackled.

This has been the objective of the SYMPATH project. Although therapeutic vaccines have been the subject of intensive research for neurodegenerative disorders, no concept has as yet entered into clinical practice.

The new vaccine works by targeting a specific protein called alpha-Synuclein, which plays a key role in the onset and progression of Parkinson's as well as 'Multiple system atrophy' (MSA). MSA is a rare neurodegenerative disorder that progresses rapidly, usually leading to death within nine years. It is associated with the degeneration of nerve cells in specific areas of the brain, causing problems with movement and balance.

These randomised, placebo-controlled trials will be conducted in Vienna and Innsbruck, Austria. The trials aim to demonstrate the safety and tolerability of the vaccine, and researchers will also assess the vaccine's immunological and clinical activity in vaccinated patients.

SYMPATH builds on the fact that vaccines have a particularly attractive cost-effectiveness ratio. Their protection rate is usually high, side effects are minimal, and vaccines only need to be administered a limited number of times. The cost-medical benefits ratio of a therapeutic vaccine is therefore unlikely to be met by any other form of treatment currently under development. In this way, the SYMPATH project will help to meet public health needs and contribute to the sustainability of

European healthcare systems.

The start of the clinical trial comes only a year after the SYMPATH consortium was launched, reflecting the high level of cooperation achieved between the expert partners. Scheduled to run until September 2017, the project has received nearly EUR 6 million in EU funding from the Seventh Framework Programme (FP7). AFFiRiS, located in Vienna, Austria, is the coordinator for the project's ambitious research programme. Project partners include five universities and three SMEs from across Europe.

More information: SYMPATH: www.sympath-project.eu/

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